

Service Manual

LINE THERMAL PRINTER

MODEL PMU-2200II / 2300II

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CITIZEN SYSTEMS JAPAN CO.,LTD.

REVISION

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INTRODUCTION

This manual describes the disassembly, reassembly, and maintenance procedures of the KIOSK printer PMU2XXX

1. DISASSEMBLY AND REASSEMBLY

Notes the following items when maintaining the printer.

- Do not disassemble, reassemble, or adjust the printer unnecessarily when the printer operation is satisfactory.
- Do not loosen the screws fixing each component carelessly.
- After finishing inspection, perform checking for normality before turning on the printer.
- Pay attention not to leave the part or screws used for maintenance inside the printer.
- When handling the print head and electronic components, pay attention to static electricity.
- When disassembling or reassembling the printer, check the wiring and cord for damage. Pay attention not to lay the wiring and cord by force.
- Lubricate the components as necessary when reassembling them.

1.1 Tools Used

- Phillips screwdriver #0, #1, and #2
- Tweezers
- Long-nose pliers
- Nipper

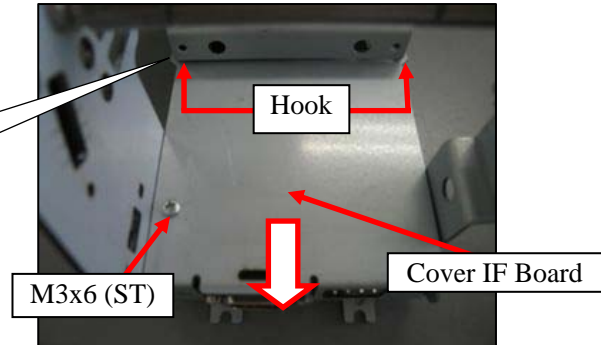
1.2 Disassembly Procedure

1.2.1 Removing Board Main

1. Removing Cover IF Board

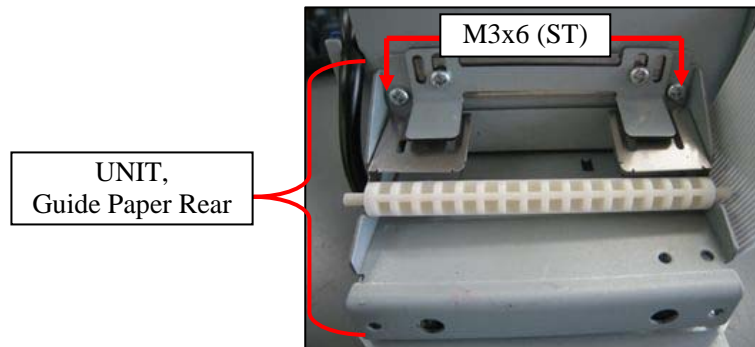
1. Remove M3x6(ST) Screw.
2. Remove Cover IF Board.

***Attention at reassembly**
Insert Cover IF Board up to the hooks.



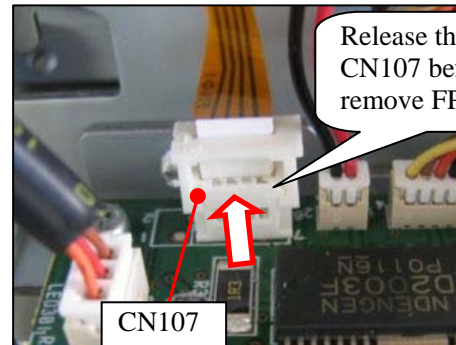
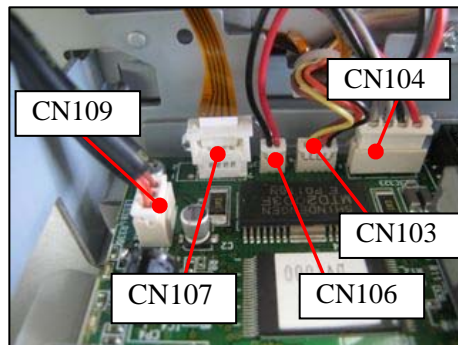
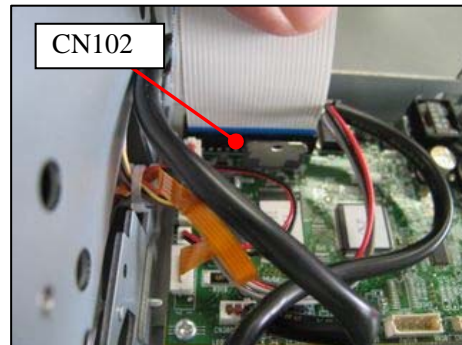
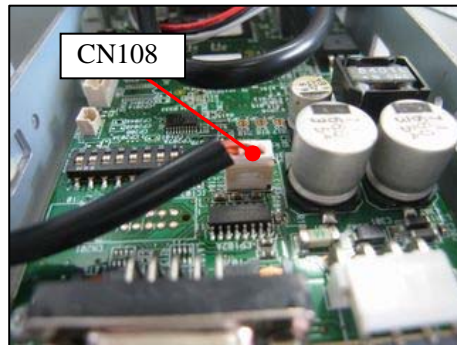
2. Removing UNIT, Guide Paper Rear

1. Remove the two M3x6(ST) Screw, and UNIT, Guide Paper Rear.

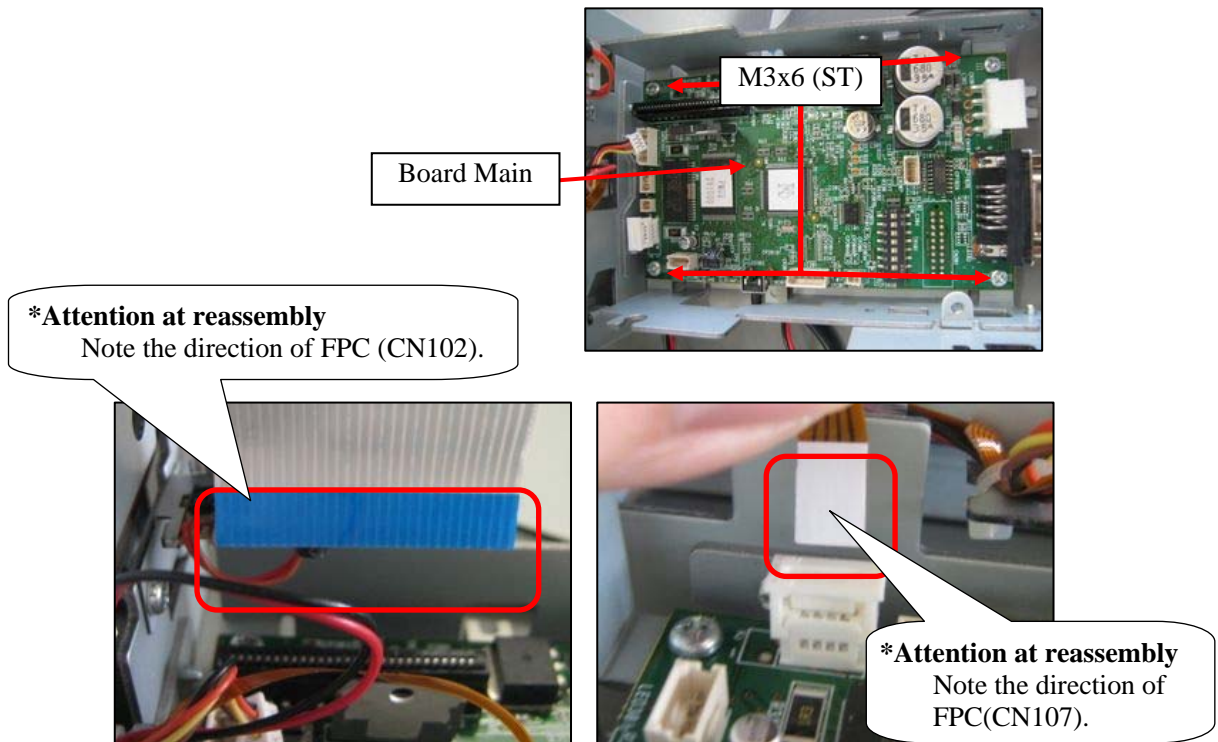


3. Removeng Board Main

1. Remove cable and FPC from Main PCB.



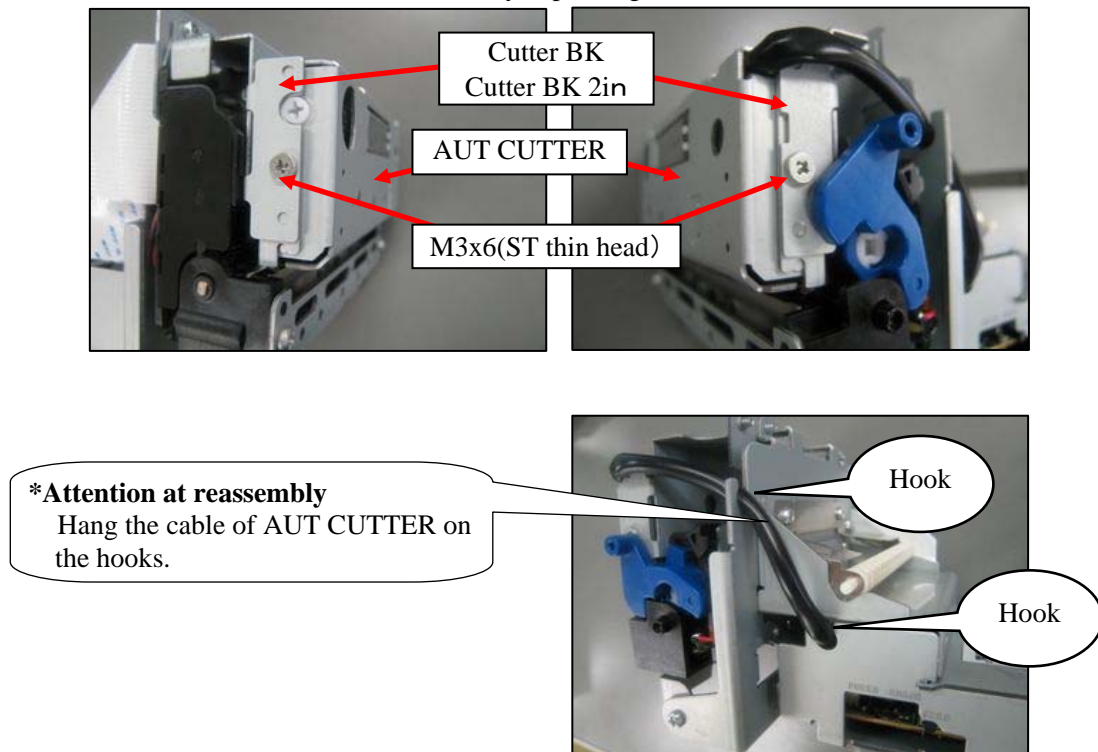
2. Remove the four M3x6(ST) Screw, and Board Main.



1.2.2 Removing UNIT,MECHANISM

1. Removeng AUT CUTTER

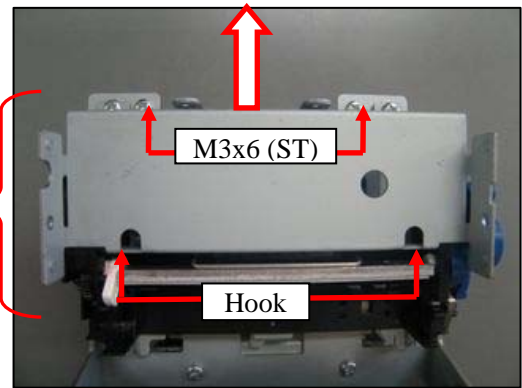
1. Remove the four M3x6(ST thin head) Screw from the side.
 2. Widen Cutter BK(Cutter BK 2in) a little, remove ,AUT CUTTER.
- * Do not transform Cutter BK(Cutter BK 2in) by expanding it in excess.



2. Removeng UNIT,MECHANISM

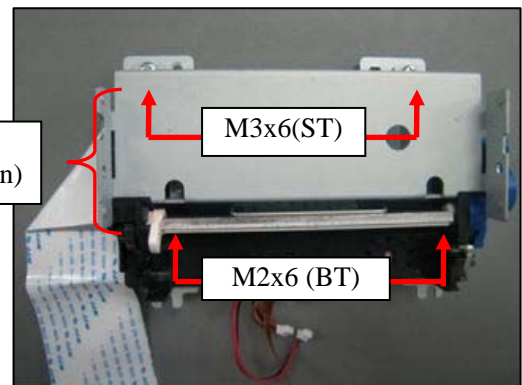
1. Remove the two M3x6(ST) Screw and remove UNIT,MECHANISM from Frame1(Frame1 2in).

UNIT,
MECHANISM

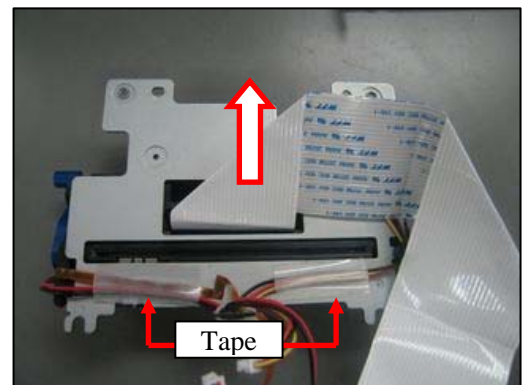


2. Remove the two M3x6(ST) Screw and two M2x6(BT) Screw and Cutter BK(Cutter BK 2in).

Cutter BK
(Cutter BK 2in)

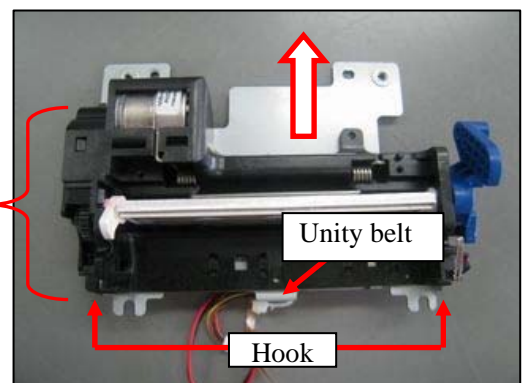


3. Pull out FPC, and Peel off the Tape that is fixation of cable.

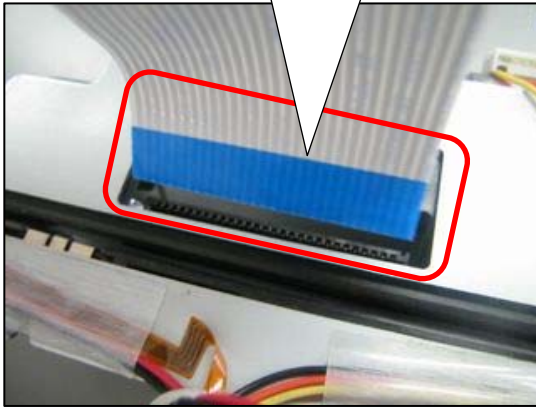


4. Cut Unity belt that is the fixation of the cable, and remove MECHANISM.

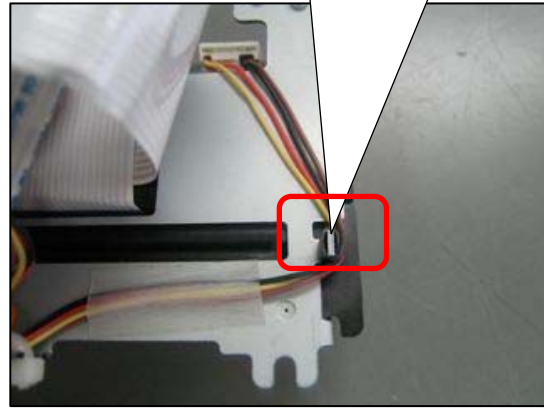
MECHANISM



***Attention at reassembly**
Note the direction of FPC.

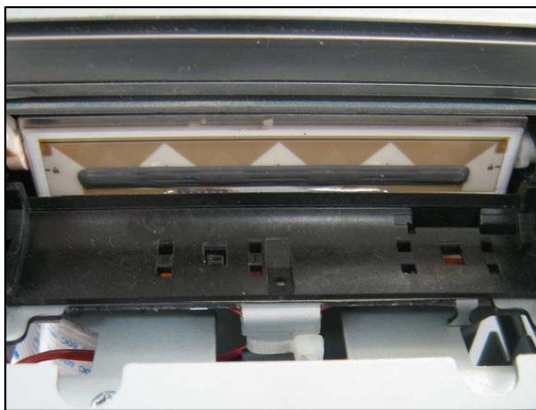


***Attention at reassembly**
Hang the cable of motor on the hooks.

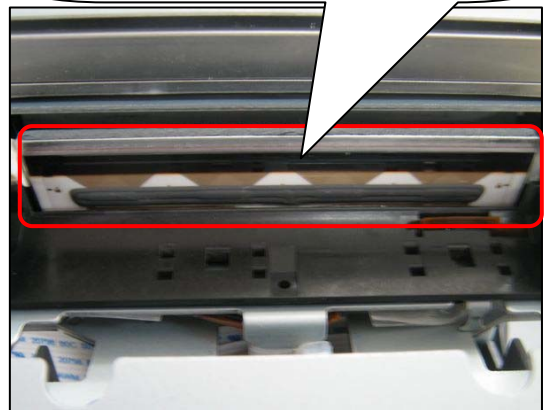


*Note that the MECHANISM C is different by PMU2200/2300 SERIES and PMU2200 II /2300 II SERIES.
Even if externals are the same, they are not compatible.

***Attention at reassembly**
The color of the coating is a black..



PMU2200/2300 SERIES



PMU2200 II /2300 II SERIES

Table MECHANISM

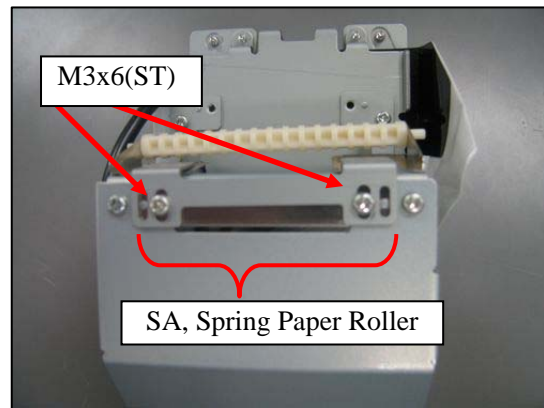
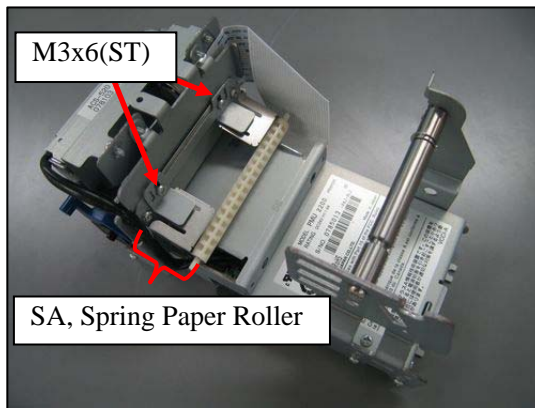
Model		PMU2200/2300 SERIES		PMU2200 II /2300 II SERIES	
2-in	Horizontal 58mm	PMU2200(A)	LT-2223V(A)	PMU2200 II (A)	LT-2223VQ(A)
	Horizontal 60mm	PMU2210(A)		PMU2210 II (A)	
	Vertical Front 60mm	PMU2211(A)	LT-2223H(A)	PMU2211 II (A)	LT-2223HQ(A)
	Vertical Back 58mm	PMU2202(A)	LT-2223V(A)	PMU2202 II (A)	LT-2223VQ(A)
	Vertical Back 60mm	PMU2212(A)		PMU2212 II (A)	
3-in	Horizontal 60mm	PMU2310(A)	LT-2321V(A)	PMU2310 II (A)	LT-2321VQ(A)
	Horizontal 80mm	PMU2300(A)		PMU2300 II (A)	
	Vertical Front 80mm	PMU2301(A)	LT-2321H(A)	PMU2301 II (A)	LT-2321HQ(A)
	Vertical Back 80mm	PMU2302(A)	LT-2321V(A)	PMU2302 II (A)	LT-2321VQ(A)

* A: Thick paper

3. Removeng SA, Spring Paper Roller

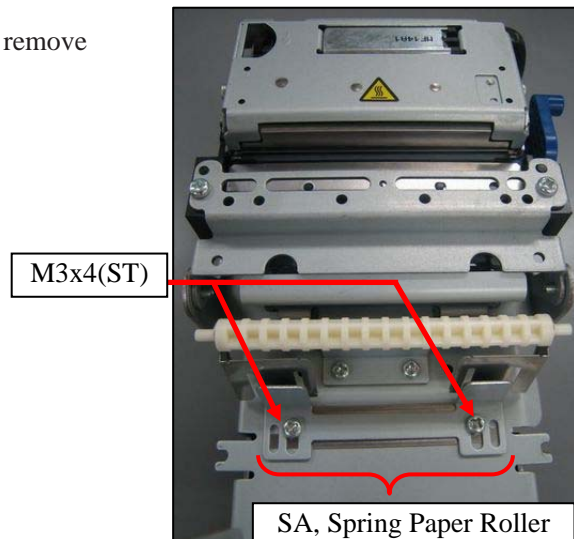
Base style: Horizontal / Vertical back-mount

1. Remove the two M3x8(ST) Screw and remove SA, Spring Paper Roller.



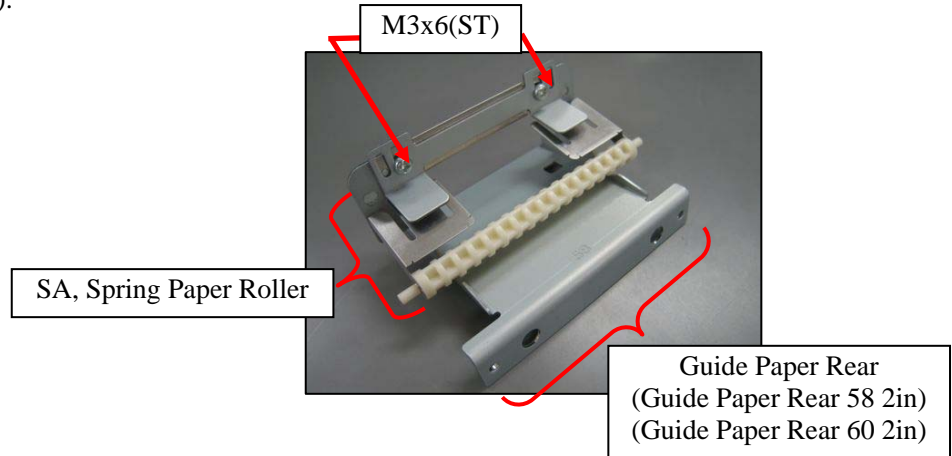
Base style: Vertical front-mount

1. Remove the two M3x4(ST) Screw and remove SA, Spring Paper Roller.



4. Removeng Guide Paper Rear

1. Remove the two M3x6(ST) Screw and remove Guide Paper Rear(Guide Paper Rear 58 2in / Guide Paper Rear 60 2in).



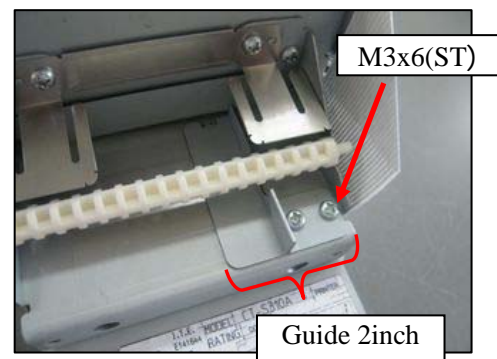
*3-in is all common. 2-in becomes the following.

Table 2-in Guide Paper Rear

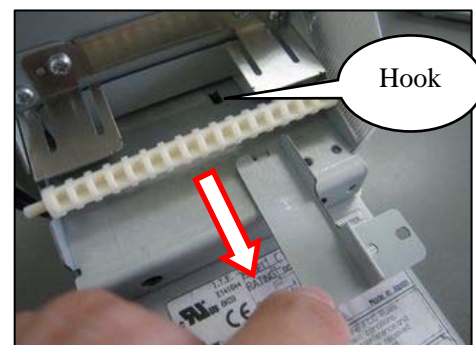
Model		Guide Paper Rear
Horizontal	58mm PMU2200 II	Guide Paper Rear 58 2in
Horizontal	60mm PMU2210 II	Guide Paper Rear 60 2in
Vertical Front	60mm PMU2211 II	—
Vertical Back	58mm PMU2202 II	Guide Paper Rear 58 2in
Vertical Back	60mm PMU2212 II	Guide Paper Rear 60 2in

5. Removeng Guide 2inch (3inch-model:PMU2310)

1. Remove the two M3x6(ST) Screw.



2. Remove Guide 2inch while floating it from the hook.



1.2.3 Removing UNIT, Paper Holder

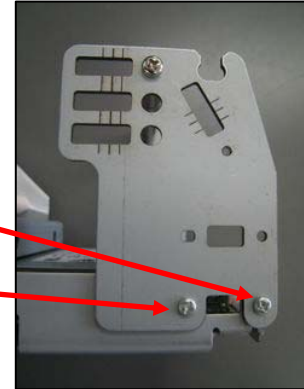
1. Removeng SA Plate Paper Holder

Insert from left / Insert from right

1. Plate Paper Holder: Remove the two M3x6(ST) Screw.

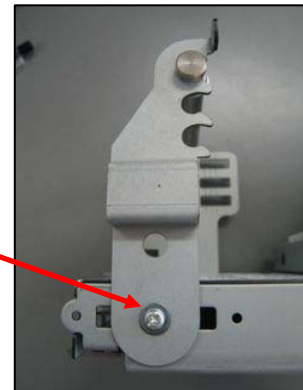
M3x6 (ST)

M3x6 (ST)



2. Stopper Paper Plate : Remove M3x6(ST)Screw and WASHER,Nut M3.

M3x6 (ST)
WASHER
Nut M3



Insert from top

1. Plate Paper Holder: Remove the four M3x6(ST) in right and left.

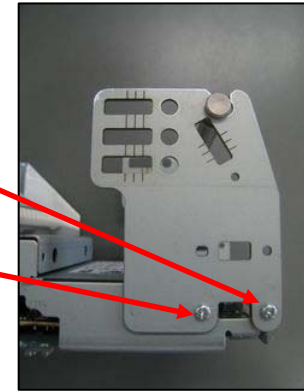
M3x6 (ST)

M3x6 (ST)



M3x6 (ST)

M3x6 (ST)



Attention at 2-inch model

*Attention at reassembly

There are two kinds of Plate Paper Holder for 2-inch model. It is different depending on the specification.



Plate Paper Holder 2in

Plate Paper Holder2 2in

***Attention at reassembly**

The screw position and the direction of Plate Paper Holder and Stopper Paper Plate are different depending on the specification.

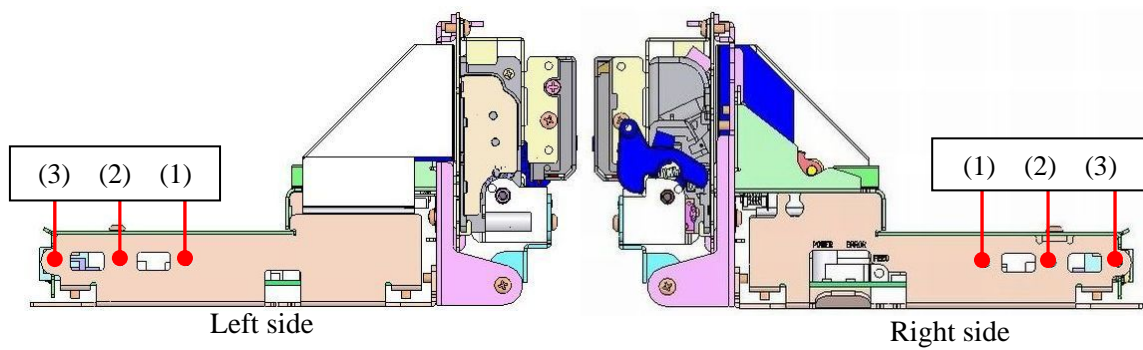


Table Paper diameter (Direction of paper insertion L: Insert from left)

Holder position	Left side			Right side			2-in Holder (*3in is all the same.)
	(3)	(2)	(1)	(1)	(2)	(3)	
1: A bit near	—	—			—	—	 Plate Paper Holder2 2in
2: Standard	—		—	—		—	
3: A bit far		—	—		—	—	 Plate Paper Holder 2in
4: Far		—	—	—		—	

*It becomes an installation in the direction of figure in the table.

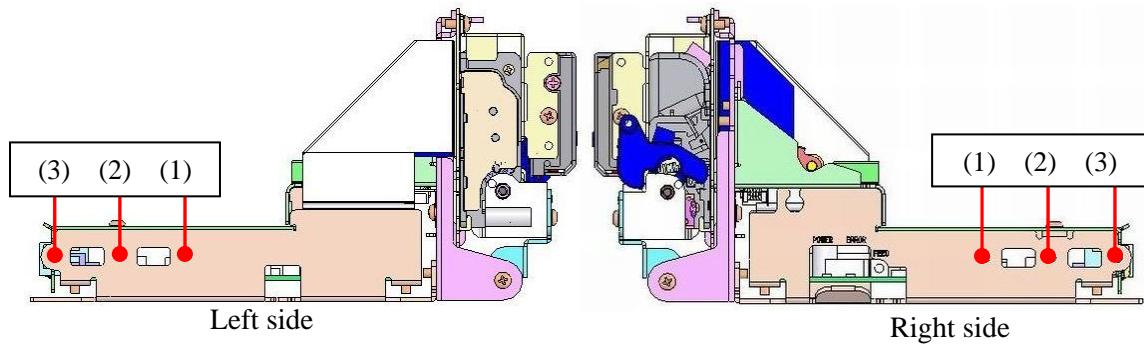
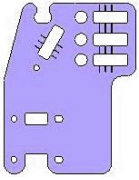

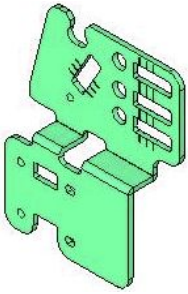
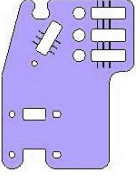

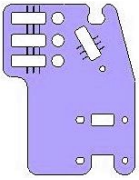

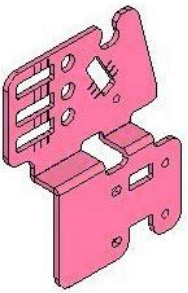
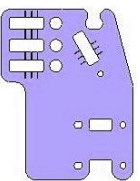

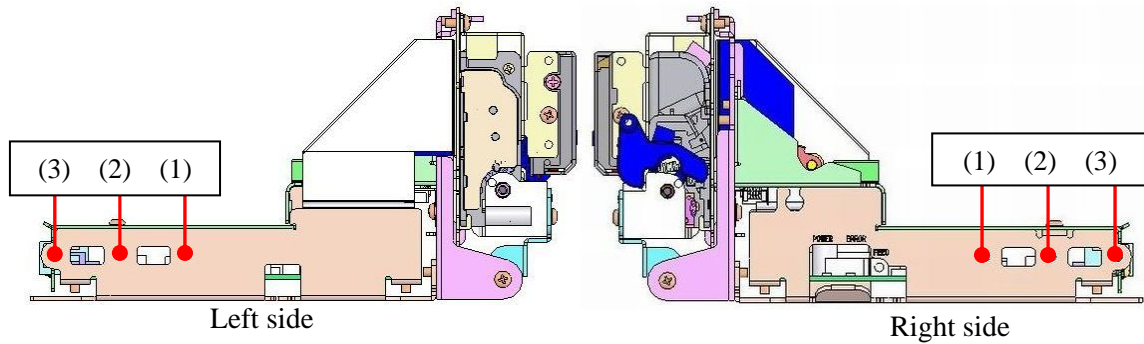


Table Paper diameter (Direction of paper insertion R: Insert from right)

Holder position	Left side			Right side			2-in Holder (*3in is all the same.)
	(3)	(2)	(1)	(1)	(2)	(3)	
1: A bit near	—			—	—	—	 Plate Paper Holder 2in
2: Standard		—		—	—	—	
3: A bit far	—		—		—	—	 Plate Paper Holder2 2in
4: Far		—	—	—		—	

*It becomes an installation in the direction of figure in the table.

**Table Paper diameter (Direction of paper insertion T: Insert from top)**

Holder position	Left side			Right side			2-in Holder (*3in is all the same.)
	(3)	(2)	(1)	(1)	(2)	(3)	
1: A bit near	—		—		—	—	Left side: Plate Paper Holder 2in
2: Standard		—	—	—		—	Right side: Plate Paper Holder2 2in
3: A bit far	—		—		—	—	Left side: Plate Paper Holder2 2in
4: Far		—	—	—		—	Right side: Plate Paper Holder 2in

*It becomes an installation in the direction of figure in the table.

*E-Ring 5 position A is different according to Direction of paper insertion.

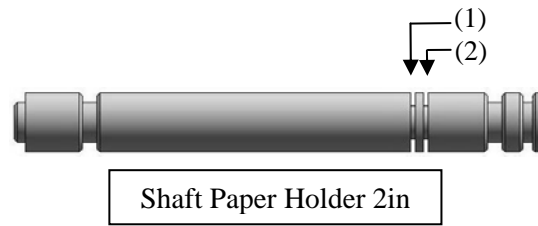


Table 2-in Model E-Ring 5 position

Model			E-Ring 5 position		
			Left	Right	Top
Horizontal	58mm	PMU2200 II	(1)		—
Horizontal	60mm	PMU2210 II	(2)		
Vertical Front	60mm	PMU2211 II			
Vertical Back	58mm	PMU2202 II	(1)		
Vertical Back	60mm	PMU2212 II	(2)		

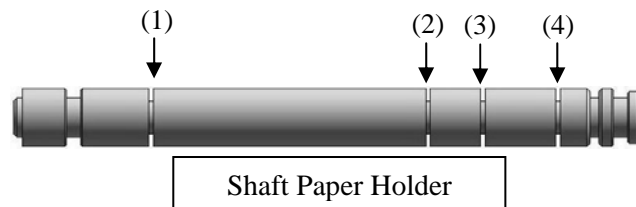


Table 3-in Model E-Ring 5 position

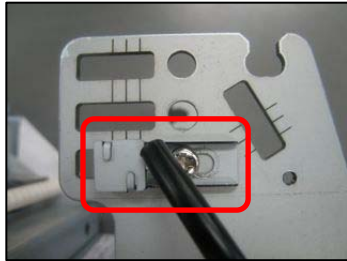
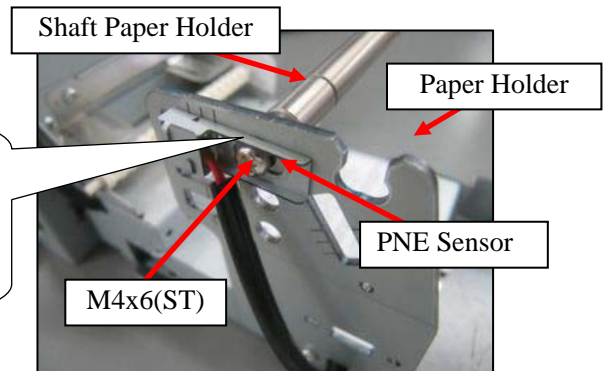
Model			E-Ring 5 position		
			Left	Right	Top
Horizontal	60mm	PMU2310 II	(2)	(1) (4)	(3)
Horizontal	80mm	PMU2300 II	(4)		—
Vertical Front	80mm	PMU2301 II			
Vertical Back	80mm	PMU2302 II			

2. Removeng PNE Sensor**Insert from left/Insert from right**

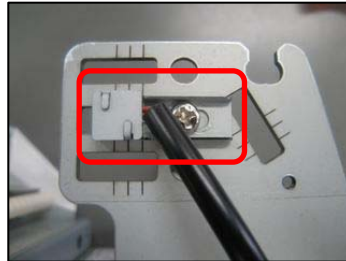
1. Remove M4x6(ST) Screw.

***Attention at reassembly**

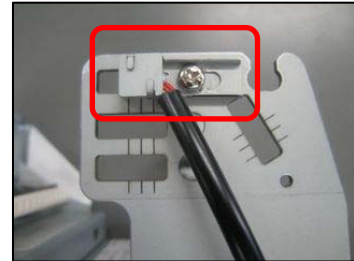
Put Plate Paper Holder and SA PNE Sensor between Shaft Paper Holder, and stop it with the screw.
Installed position is different depending on the specification.



6: 60mm



8: 80mm



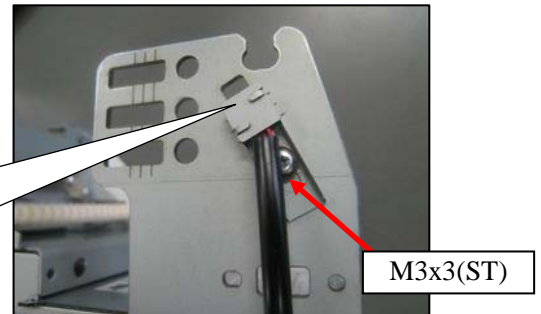
1: 102mm

Insert from top

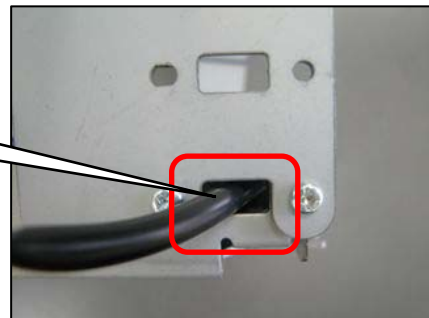
1. Remove M3x3(ST) Screw.

***Attention at reassembly**

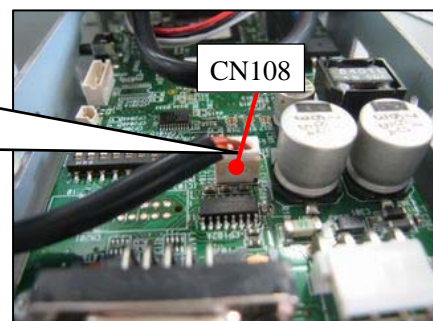
Put Plate Paper Holder and SA PNE Sensor between Shaft Paper Holder, and stop it with the screw.

***Attention at reassembly**

The cable is passed through the hole

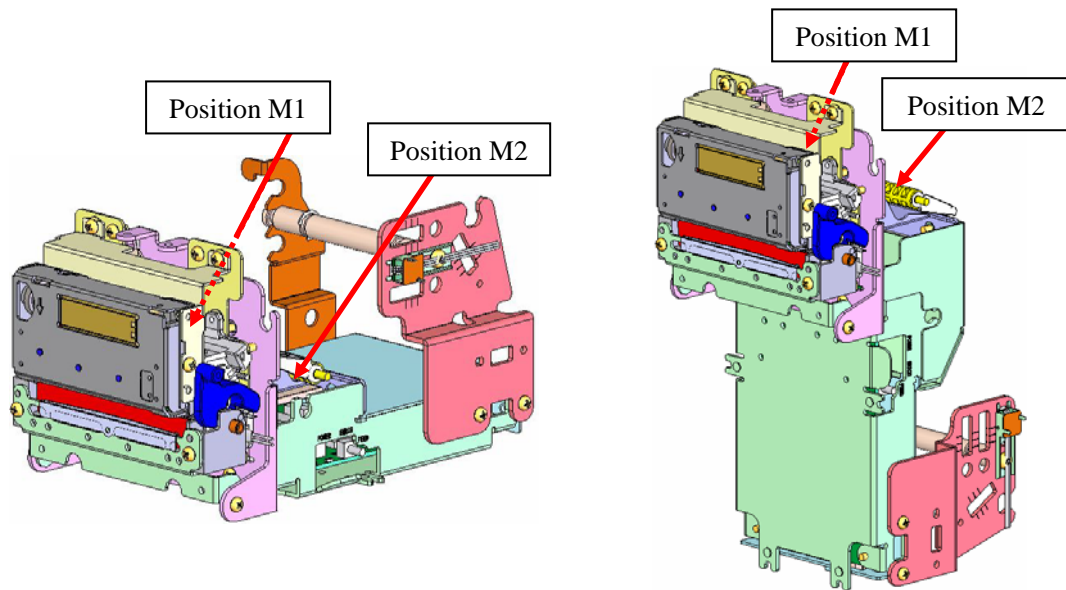
***Attention at reassembly**

Connect BM Sensor with CN108 of Borad Main do not make a mistake because CN108 and CN109 are connectors of this type.



1.2.4 Removeng BM Sensor

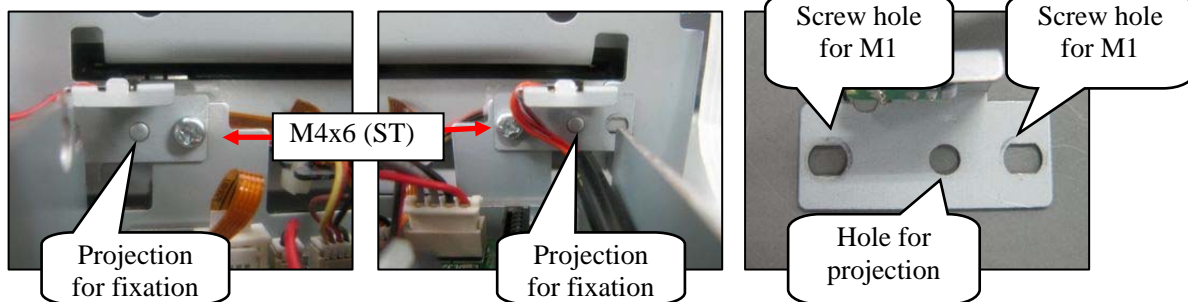
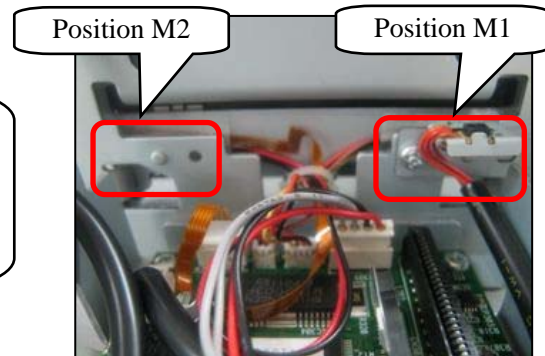
Base style: Horizontal / Vertical back-mount



1. Remove M3x6(ST) Screw.

***Attention at reassembly**

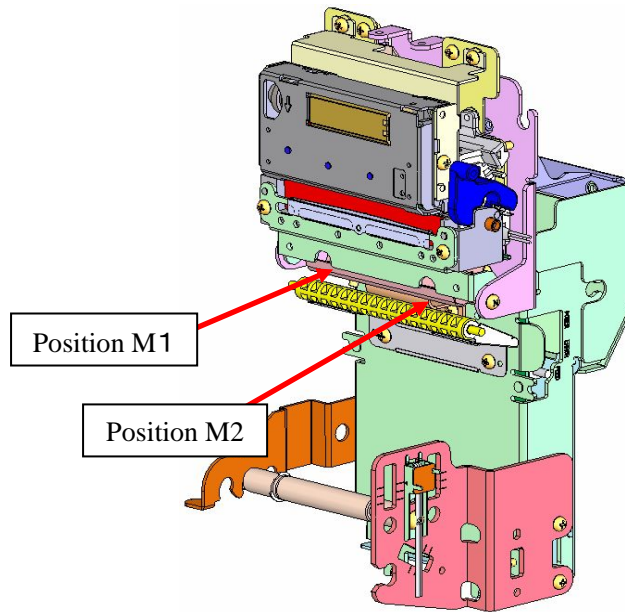
The screw hole is different because of Position.
Fix the hole for projection on Projection for fixation.



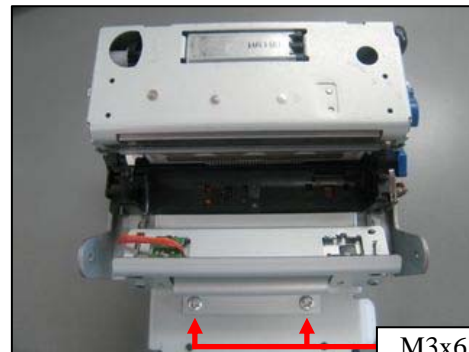
***Attention at reassembly**

Connect BM Sensor with CN109 of Board Main. Do not make a mistake because CN108 and CN109 are connectors of this type.

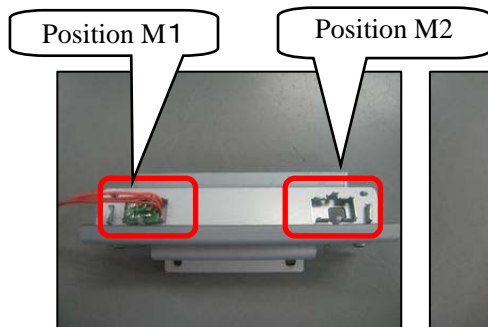


Base style: Vertical front-mount

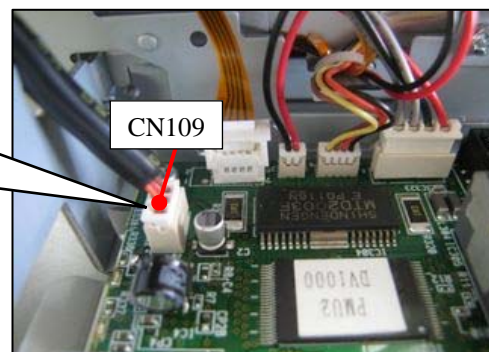
1. Remove the two M3x6(ST) Screw.
2. Remove SA PNE Sensor.



M3x6 (ST)

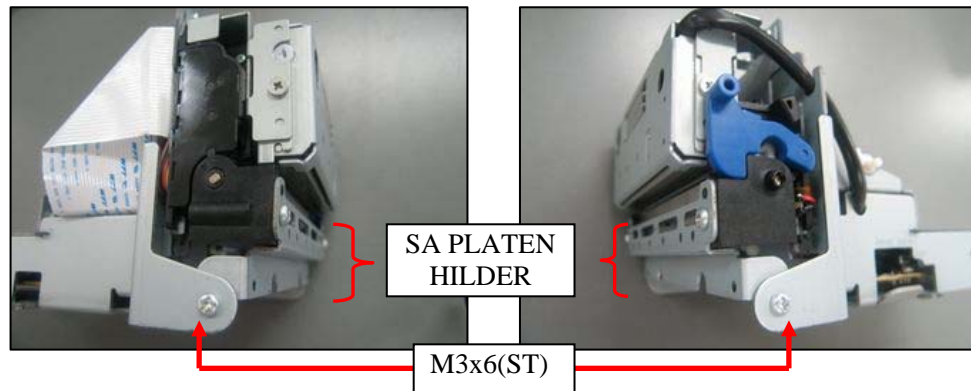
***Attention at reassembly**

Connect BM Sensor with CN109 of Board Main. Do not make a mistake because CN108 and CN109 are connectors of this type.

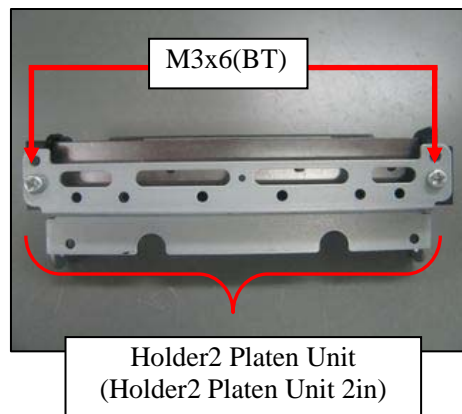


1.2.5 Removeng SA PLATEN HILDER

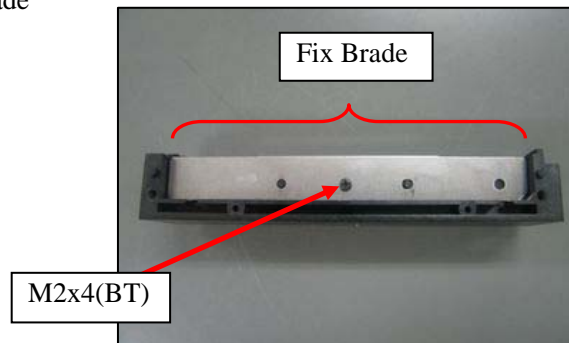
1. Remove the two M3x6(ST) Screw from the side.And remove Unit SA PLATEN HILDER from Frame 1(Frame 1 2in).



2. Remove the two M3x6(BT) Screw.



3. Remove M2x4(BT) Screw and Fix Brade



2. Memory Switch Setting

It is registered in the printer as follows by the option of the factory. They are different by the model, and not possible to change

- (1) Printer Name of the self-printing
- (2) Printer Name of the self-printing
- (3) Initial value

However, the above-mentioned is unrelated to the function it. It is possible to correspond by changing the Memory Switch.

Base Model

Memory Switch Setting is as follows. If Memory Switch Setting is not correct, the printer doesn't operate correctly.

Table Base Model

Base Model	MSW4-5 Mechanism mounted		MSW2-6 Paper width		MSW4-4 Base style	
Horizontal 58mm PMU2200 II	ON	LT-22XX	ON	58(60)mm	OFF	PMU2XX0/2XX2
Horizontal 60mm PMU2210 II					ON	PMU2XX1
Vertical Front 60mm PMU2211 II					OFF	PMU2XX0/2XX2
Vertical Back 58mm PMU2202 II						
Vertical Back 60mm PMU2212 II	OFF	LT-23XX	OFF	80 mm	ON	PMU2XX1
Horizontal 60mm PMU2310 II						
Horizontal 80mm PMU2300 II					OFF	PMU2XX0/2XX2
Vertical Front 80mm PMU2301 II					ON	PMU2XX1
Vertical Back 80mm PMU2302 II					OFF	PMU2XX0/2XX2

Destination

Memory Switch Setting is as follows.

Table Destination

Destination	MSW9-1 Code Page	MSW9-2 Int'Char Set	MSW9-3 Kanji
J : Japan	Katakana	Japan	ON
U: US/EU/Other	PC437	U.S.A	OFF

PNE Sensor

Memory Switch Setting is as follows.

Table PNE Sensor

PNE Sensor	MSW2-8 PNE Sensor	
No mark : Without sensor	ON	Invalid
P : PNE sensor	OFF	Valid

Paper Select

Memory Switch Setting is as follows.

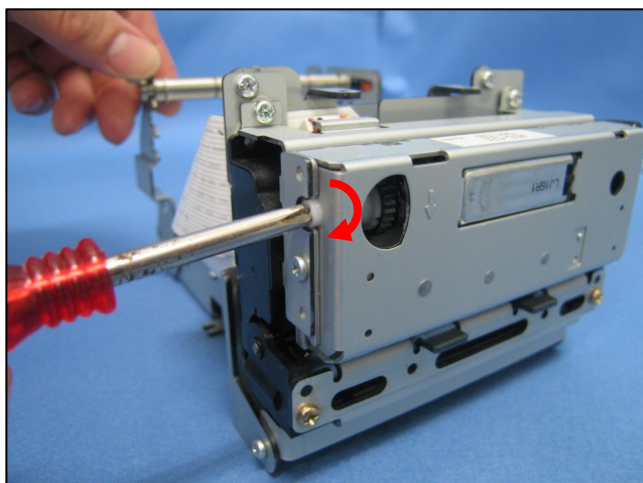
Table Paper Select

Paper	MSW3-4 Paper Select		MSW4-1 Auto Length	
No mark : Thermal	OFF	Thermal	OFF	Invalid
M1/M2 : Black MK	ON	Black MK	ON	Valid

3. TROUBLESHOOTING

3.1 Error Indication

- Paper end
Paper out is detected in two steps: paper near-end and paper end. ERROR LED will light when the paper is empty. If paper end is detected, refill the paper. If the printer cover is open, a paper-end is detected.
- Printer Platen open
During printing, do not open the platen. If you open the printer cover accidentally, the ERROR LED blinks. Check the paper, pull the paper straightforward several cm (or inches) out of the printer, and then close the Platen. Printing resumes automatically. Sending a command to resume printing may be required depending on the memory switch setting.
- Thermal head overheating
When you print dense characters or dark image, the head temperature rises. If the head temperature exceeds a specified level, the printer stops printing operation and waits till the head temperature is lowered. During waiting, the ERROR LED blinks. When the head temperature is lowered, printing resumes automatically.
- Cutter lock
If the cutter blade stops operating due to paper jam or the like, the ERROR LED blinks. Remove the cause of the trouble and press the FEED button. If the blade still does not move and the printer cover cannot be opened. In this case, do not open the paper cover forcibly. Insert a Phillips screwdriver (size #1) into the cutter lock releasing feed hole and turn it in the direction of arrow (clockwise).

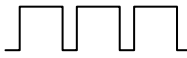










When you find that both ends of the blade reached the lowest position, stop turning the screwdriver. Open the cover and follow the procedure of removing jam or other cause of trouble.

● Black Mark detection error (in Black Mark mode)

When Black Mark cannot be detected even if a certain amount of paper feed is carried out for Black mark detection, a Black Mark detection error occurs. If black detection continues more than the specified period, a No Paper condition is assumed and the same error as No Paper is indicated.

Lighting and blinking status of each error including the above is shown below.

Content of Error		POWER LED (Green)	ERROR LED (Red)
1) Error to recover automatically	[1] Head overheat error	ON	
	[2] Platen open error (MSW3-8 OFF: With automatic return set)	ON	
2) Recoverable error	[1] Platen open error (MSW3-8 ON: With recoverable feature set)	ON	
	[2] Cutter lock error	ON	
3) Not recoverable error	[1] Memory check error		ON
	[2] Low voltage error	ON	
	[3] High voltage error	ON	
4) Other state	[1] Paper near end	ON	ON
	[2] Paper end	ON	ON
	[3] Platen open	ON	ON
	[4] Waiting for macro execution	ON	
5) Black mark specification relation	[1] Black mark paper detection error	ON	

Caution: In many cases, “Low voltage error” is caused by blown F302 fuse. Please check the conduction of F302 fuse.

3.2 Troubleshooting Procedure

When a trouble occurs, confirm its phenomenon, locate a defective part in accordance with “2.2 Troubleshooting Guide”, and troubleshoot as described below.

Phenomenon	Find a trouble phenomenon in this column. If there are multiple phenomena, take all the corresponding items into consideration to locate hidden defective parts.
Cause	Lists as many possible causes as possible. Guess a trouble cause out of them and take its check method to specify the trouble cause.
Check Method	Describes a check method to specify a trouble cause.
Remedy	Troubleshoot by taking a remedy described in this column.

By troubleshooting in accordance with the above-mentioned procedure, you can troubleshoot efficiently with fewer misjudgments.

3.3 Troubleshooting Guide

• Power Supply Failure

Phenomenon	Cause	Check Method	Remedy
No power (POWER lamp not illuminated)	The AC cable is not connected.	—	Connect AC cable.
	The fuse is gone.	Check whether the specified fuse is used.	Use the specified fuse.
The fuse immediately goes again after replacing with a new one.	Faulty control PCB assy	—	Replace the control PCB assy.
	The circuit drive power is abnormal.	Use instruments such as tester to measure circuit driving voltage.	Replace the control PCB assy.

* If the fuse is gone with the specified AC adapter used, it is likely that the thermal head unit or control PCB assy is defective. Replace either defective one. Check wiring for drawer cable and interface cable.

• **Printing failure**

Phenomenon	Cause	Check Method	Remedy
No printing	Faulty control PCB assy	—	Replace the control PCB assy.
	Failed contact/connection of thermal head connector	Check contact/connection condition.	Re-insert thermal head connector.
	Faulty thermal head	—	Replace the thermal head.
Partly not printed	Faulty contact/connection in thermal head connector	Check contact/connection conditions.	Re-insert thermal head connector.
	Faulty thermal head	—	Replace the thermal head.
Faint printout or uneven printout	Low output voltage	Check the supply voltage with tester or others.	Use within specified voltage range.
	Faulty thermal head	—	Replace the thermal head.
	Foreign substance is adhered to the thermal head.	Check whether any foreign substances are adhered to the head.	Wipe foreign materials with swab or soft cloth immersed with ethyl alcohol.
	Non-recommended paper is used.	Check whether the paper being used meets the specification.	Replace it with the specified paper.
	Faulty mounting of the platen roller	Check mounting condition of the platen roller.	Mount the platen roller properly.

- Paper feed failure

Phenomenon	Cause	Check Method	Remedy
Paper is not fed or jammed.	Faulty connection of the motor connector	Check the connector connection.	Connect the connector correctly.
	Failed motor's main unit	Use tester or oscilloscope or other instrument to measure supply voltage.	If the supply voltage is normal, replace the motor.
	Low output voltage	Check the supply voltage with tester or others.	Use within specified voltage range.
	Faulty control PCB assy	—	Replace the control PCB assy.
	Faulty mounting of the platen roller	Check mounting condition of the platen roller.	Mount the platen roller properly.
	Paper feed failure	Check that no paper is jammed, torn or caught in the paper path.	Remove unnecessary paper and set correctly.
	Foreign substance in the gear or broken gear	Remove the gear holder and check for any foreign substance caught in the gears or any breakage of the gears.	Eliminate the foreign substance. If the gear is broken, replace it with new one.

- Faulty sensor

Phenomenon	Cause	Check Method	Remedy
Failed detection of paper feed Failed detection of paper's near-end	Faulty paper sensor	Check whether the ERROR LED flickers if paper expires.	Replace the SA SUB PWB PE SENSOR.
	Faulty paper near-end sensor		Replace the SA PNE SENSOR.
	Foreign substance is attached to the paper sensor	Check whether any foreign substances are adhered to the paper sensor.	Remove the foreign substance.
	Faulty connection of the paper sensor connector	Check the connector connection.	Connect the connector correctly.

• Faulty auto cutter

Phenomenon	Cause	Check Method	Remedy
No operation of auto-cutter	Faulty connection of the auto cutter connector	Check the connecting condition of the auto cutter connector.	Connect the connector correctly.
	Failure in auto-cutter's main unit	Use tester or oscilloscope or other instrument to measure supply voltage.	If the supply voltage is normal, replace the auto cutter.
	Paper feed failure (Paper jam)	Check that no paper is jammed, torn or caught in the paper path.	Remove unnecessary paper and set correctly.

4. SERVICE PARTS LIST

4.1 Parts List for Mechanism

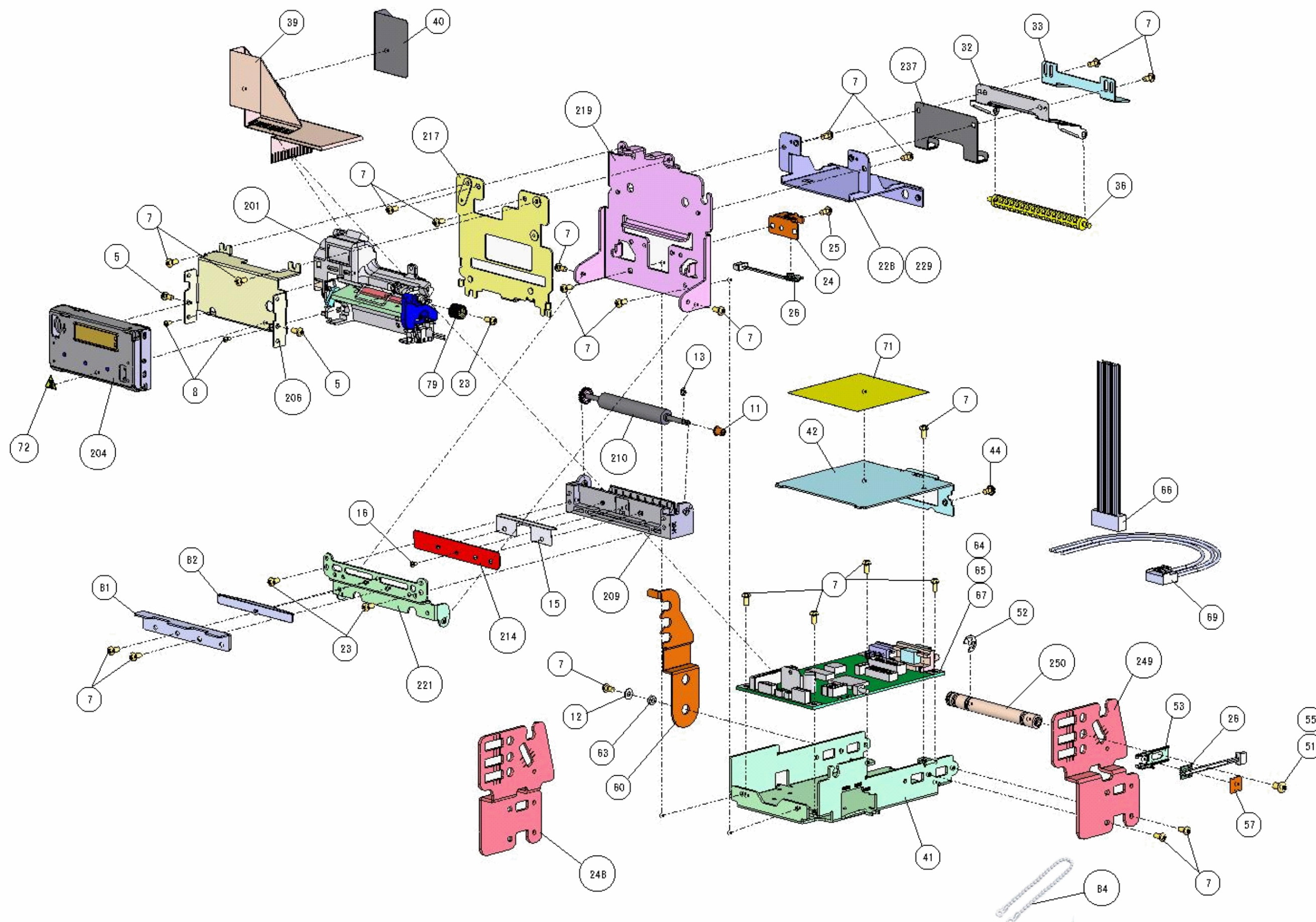
No.	PARTS No.	DESCRIPTION	QTY						REMARKS	
			2200 2210	2211	2202 2212	2300 2310	2301	2302		
201	PF22-SQxGx	UNIT,MECHANISM	LT2223VQ (with Platen assy)	1	0	1	0	0	0	2inch
202	PF22-CQxGx		LT2223HQ (with Platen assy)	0	1	0	0	0	0	2inch
206	ZF44109-00F		Cutter BK 2in	1	1	1	0	0	0	2inch
217	ZF44114-00F		Plate Printer 2in	1	1	1	0	0	0	2inch
1	PF23-SQxCx		LT2321VQ (with Platen assy)	0	0	0	1	0	1	3inch
2	PF23-CQxCx		LT2321HQ (with Platen assy)	0	0	0	0	1	0	3inch
6	ZF44101-01F		Cutter BK	0	0	0	1	1	1	3inch
17	ZF44102-01F		Plate Printer	0	0	0	1	1	1	3inch
39	ZF67901-00F		FPC	1	1	1	1	1	1	2/3inch
40	ZF44116-00F		Sheet FFC Support	1	1	1	1	1	1	2/3inch
204	ACS520	AUT CUTTER	ACS520 Cutter(with Fix Brade)	1	1	1	0	0	0	2inch
4	ACS530		ACS530 Cutter(with Fix Brade)	0	0	0	1	1	1	3inch
209	ZF24201-00F	SA PLATEN HILDER	Platen Holder 2in	1	1	1	0	0	0	2inch
210	PF28205-01F		(Platen)	1	1	1	0	0	0	2inch
214	500374-00		(Fix Brade)	1	1	1	0	0	0	2inch
221	ZF44113-01F		Holder2 Platen Unit 2in	1	1	1	0	0	0	2inch
9	600382-00		Platen Holder	0	0	0	1	1	1	3inch
10	PF28206-01		(Platen)	0	0	0	1	1	1	3inch
14	500318-00		(Fix Brade)	0	0	0	1	1	1	3inch
21	ZF44104-01F		Holder2 Platen Unit	0	0	0	1	1	1	3inch
11	600350-00		Platen Bush1	1	1	1	1	1	1	2/3inch
13	E60325-000F		E-Ring 2.5	1	1	1	1	1	1	2/3inch
15	ZF24123-00F		Paper Guide-2(3SEC1848)	1	1	1	1	1	1	2/3inch
219	ZF44110-00F	Exterior	Frame 1 2in	1	1	1	0	0	0	2inch
228	ZF44111-00F		Guide Paper Rear 58 2in	(1)	0	(1)	0	0	0	2inch
229	ZF44112-00F		Guide Paper Rear 60 2in	(1)	1	(1)	0	0	0	2inch
245	ZF24115-00F		Plate BM 2in	0	1	0	0	0	0	2inch
246	ZF24113-00F		Guide 2 BM Sensor 2in	0	1	0	0	0	0	2inch
19	ZF44103-00F		Frame 1	0	0	0	1	1	1	3inch
28	ZF44105-00F		Guide Paper Rear	0	0	0	1	1	1	3inch
45	ZF24108-00F		Plate BM	0	0	0	0	1	0	3inch
46	ZF24109-00F		Guide 2 BM Sensor	0	0	0	0	1	0	3inch
83	ZF24111-00F		Guide 2inch	0	0	0	(1)	0	0	3inch
30	ZF44108-00F		Cover Rear	0	1	1	0	1	1	2/3inch
33	ZF24120-00F		Stopper Paper Roller Spring	1	1	1	1	1	1	2/3inch
41	ZF44106-01F		Frame IF Board	1	1	1	1	1	1	2/3inch
42	ZF44107-02F		Cover IF Board	1	1	1	1	1	1	2/3inch

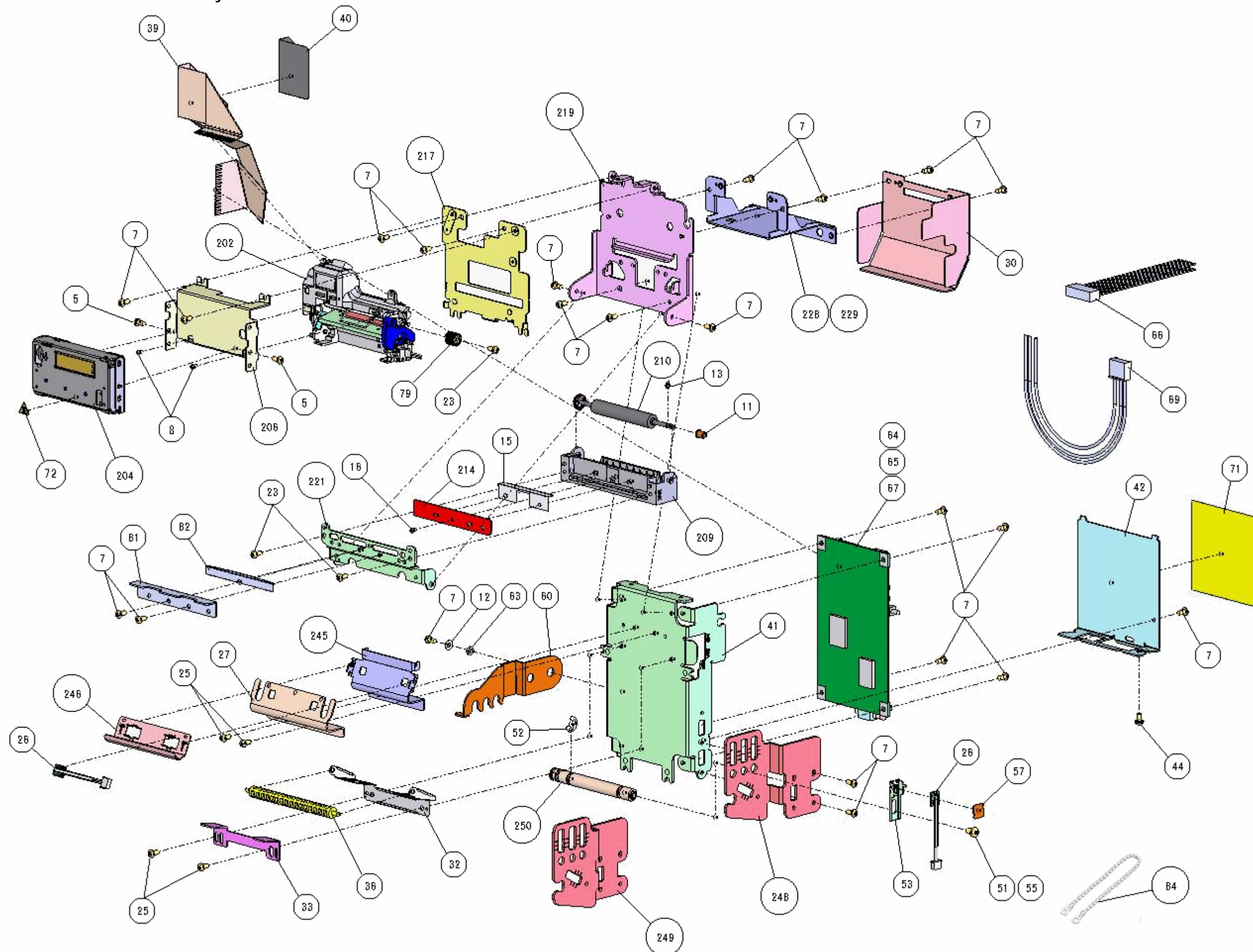
No.	PARTS No.	DESCRIPTION	QTY						REMARKS	
			2200 2210	2211	2202 2212	2300 2310	2301	2302		
32	ZF24103-00F	SA, Spring Paper Roller	1	1	1	1	1	1		2/3inch
36	60-0194	Paper Roller (CBM1000)	1	1	1	1	1	1		2/3inch
248	ZF24116-00F	Paper Holder	1(2)	1(2)	1(2)	0	0	0	Insert from top:2	2inch
249	ZF24117-00F	Plate Paper Holder 2in	1(2)	1(2)	1(2)	0	0	0	Insert from top:2	2inch
250	ZF22002-00F	Shaft Paper Holder 2in	1	1	1	0	0	0		2inch
48	ZF24105-00F	Plate Paper Holder	0	0	0	1(2)	1(2)	1(2)	Insert from top:2	3inch
50	ZF22001-02F	Shaft Paper Holder	0	0	0	1	1	1		3inch
60	ZF24107-01F	Stopper Paper Plate	1(0)	1(0)	1(0)	1(0)	1(0)	1(0)	Insert from top:0	2/3inch
64	ZF66807-00F	Board Main	(1)	(1)	(1)	(1)	(1)	(1)	Serial model	2/3inch
65	ZF66808-00F	SA,Main PCB II PA	(1)	(1)	(1)	(1)	(1)	(1)	Parallel model	2/3inch
67	ZF66809-00F	SA,Main PCB II UB	(1)	(1)	(1)	(1)	(1)	(1)	USB model	2/3inch
69	ZF66701-00F	Accessories	1	1	1	1	1	1		2/3inch
66	SEC-4790	CA212-17Cord Assy (RoHS) 500/L	(1)	(1)	(1)	(1)	(1)	(1)	Parallel model	2/3inch
26	ZF66702-00F	Option	(2)	(2)	(2)	(2)	(2)	(2)	BM Sensor:1 PNE Sensor:1	2/3inch
237	ZF24114-01F	Guide BM Sensor 2in	(1)	0	(1)	0	0	0	BM Sensor	2inch
37	ZF24104-01F	Guide BM Sensor	0	0	0	(1)	0	(1)	BM Sensor	3inch
24	ZF24102-01F	Holder BM Sensor	(1)	0	(1)	(1)	0	(1)	BM Sensor	2/3inch
27	ZF24122-00F	Spacer BM plate	0	(1)	0	0	(1)	0	BM Sensor	2/3inch
53	ZF24106-01F	Holder PNE	(1)	(1)	(1)	(1)	(1)	(1)	PNE Sensor	2/3inch
56	K-103GN	Cord Keep	(1)	(1)	(1)	(1)	(1)	(1)	PNE Sensor	2/3inch
57	ZF24112-00F	Cover PNE Holder	(1)	(1)	(1)	(1)	(1)	(1)	PNE Sensor	2/3inch
79	600404-00	Spare Knob	(1)	(1)	(1)	(1)	(1)	(1)	Other Option	2/3inch
81	ZF24121-00F	Guide Front	(1)	(1)	(1)	(1)	(1)	(1)	Other Option	2/3inch
82	50-0173	Paper Stopper SEC2022	(1)	(1)	(1)	(1)	(1)	(1)	Other Option	2/3inch

No.	PARTS No.	DESCRIPTION	QTY						REMARKS	
			2200 2210	2211	2202 2212	2300 2310	2301	2302		
5	E17030-060F	etc	Screw.No.00,TFH(ST),M3x6(thin head)	2	2	2	2	2		2/3inch
7	E11130-060F		Screw.PHT(ST),M3x6	30	30	30	30	30		2/3inch
8	E11720-060F		Screw.PHT(BT),M2x6	2	2	2	2	2		2/3inch
16	E11720-040DF		Screw.PHT(BT),M2x4(brack chrome)	1	1	1	1	1		2/3inch
23	E11730-060F		Screw.PHT(BT),M3x6	2	2	2	2	2	Other Option Spare Knob:3 BM Sensor:1	2/3inch
25	E11130-040F		Screw.PHT(ST),M3x4	0	0	0	0	0		2/3inch
44	E11830-080F		SCREW,PHT(INT.TW)M3x6(toothed lock)	1	1	1	1	1		2/3inch
51	E00140-060F		Screw.PH,M4x6	(1)	(1)	(1)	(1)	(1)	Insert from top:1 PNE Sensor & Insert from top:1	2/3inch
55	E00130-030F		Screw.PHT,M3x3	(1)	(1)	(1)	(1)	(1)		2/3inch
52	E60350-000F		E-Ring 5	1(0)	1(0)	1(0)	1(2)	1(0)		2/3inch
12	E50130-105F		WASHER,PLANE,3X8X0.5	1	1	1	1	1	Insert from top:0 Insert from top:0	2/3inch
63	E40230-000F		NUT,(#3),M3	1	1	1	1	1		2/3inch
71	ZF999021-00F		Label Rating II	1	1	1	1	1		2/3inch
72	80-0276		Caution Hot (SEC2049)	1	1	1	1	1		2/3inch
84	G17023		Stainless ball chain(TM-14-2)	(1)	(1)	(1)	(1)	(1)	Insert from top:1	2/3inch

4.2 Exploded View of Mechanism

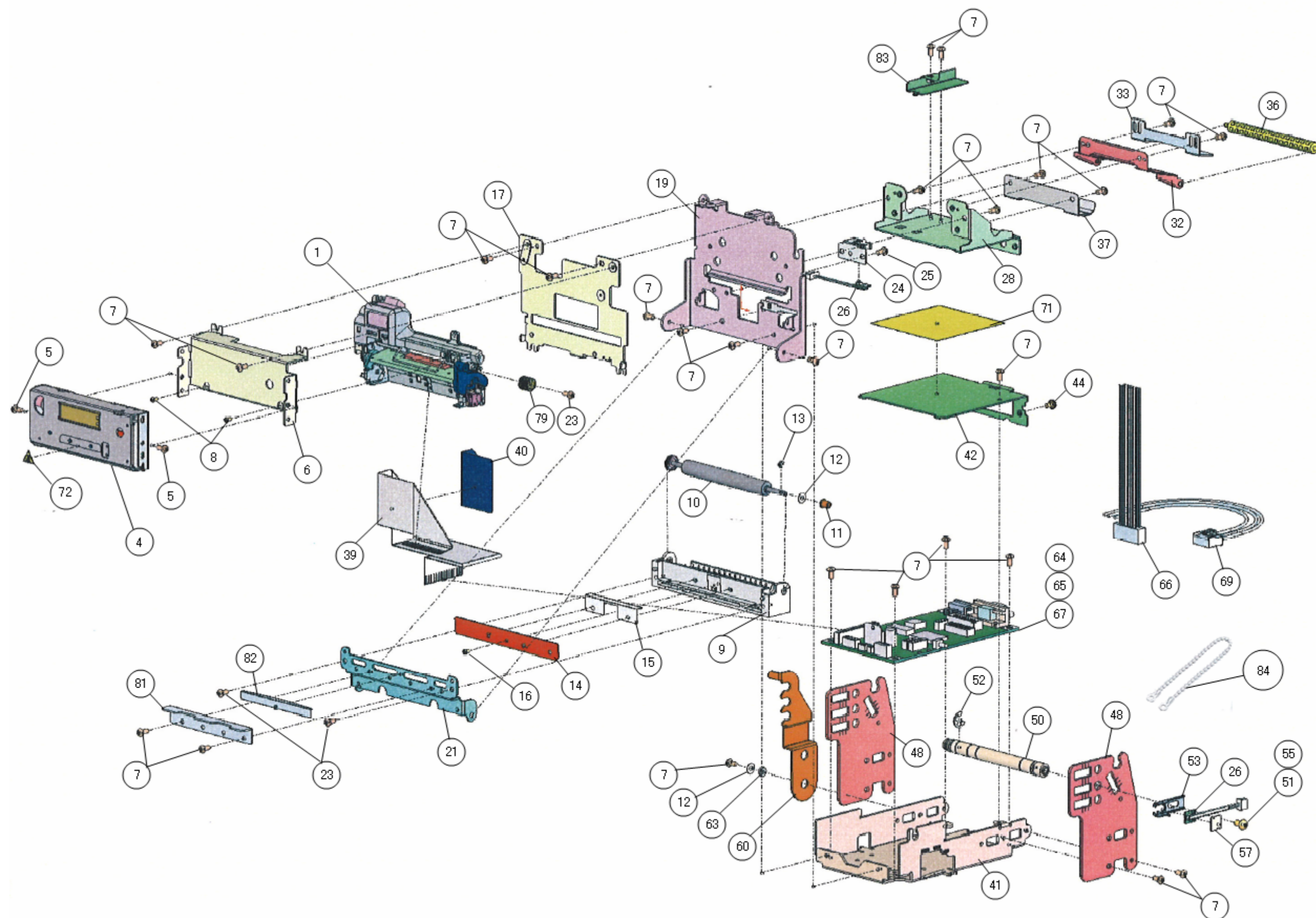
4.2.1 PMU2220 II / 2210 II 2-inch mode Base style:Horizontal



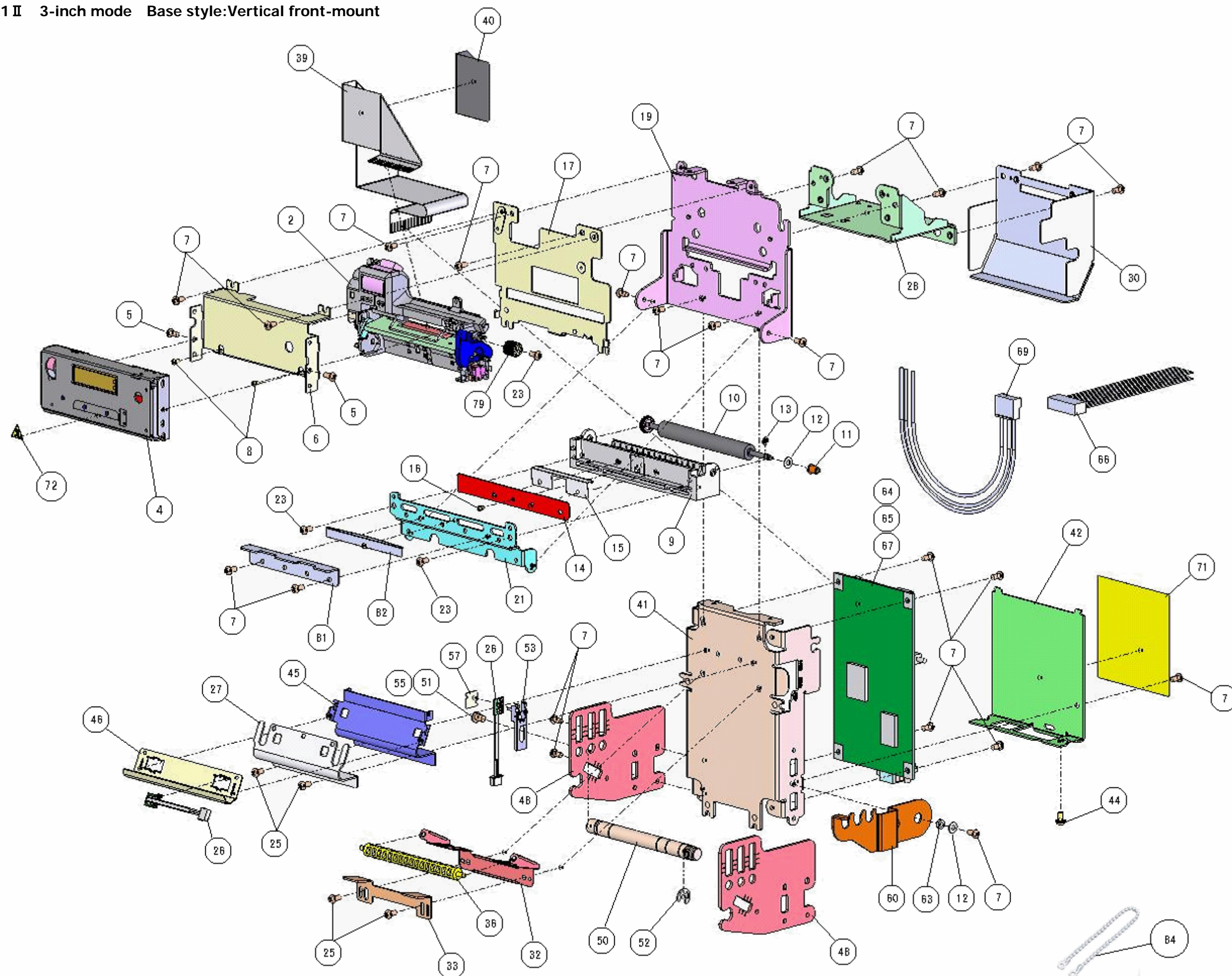




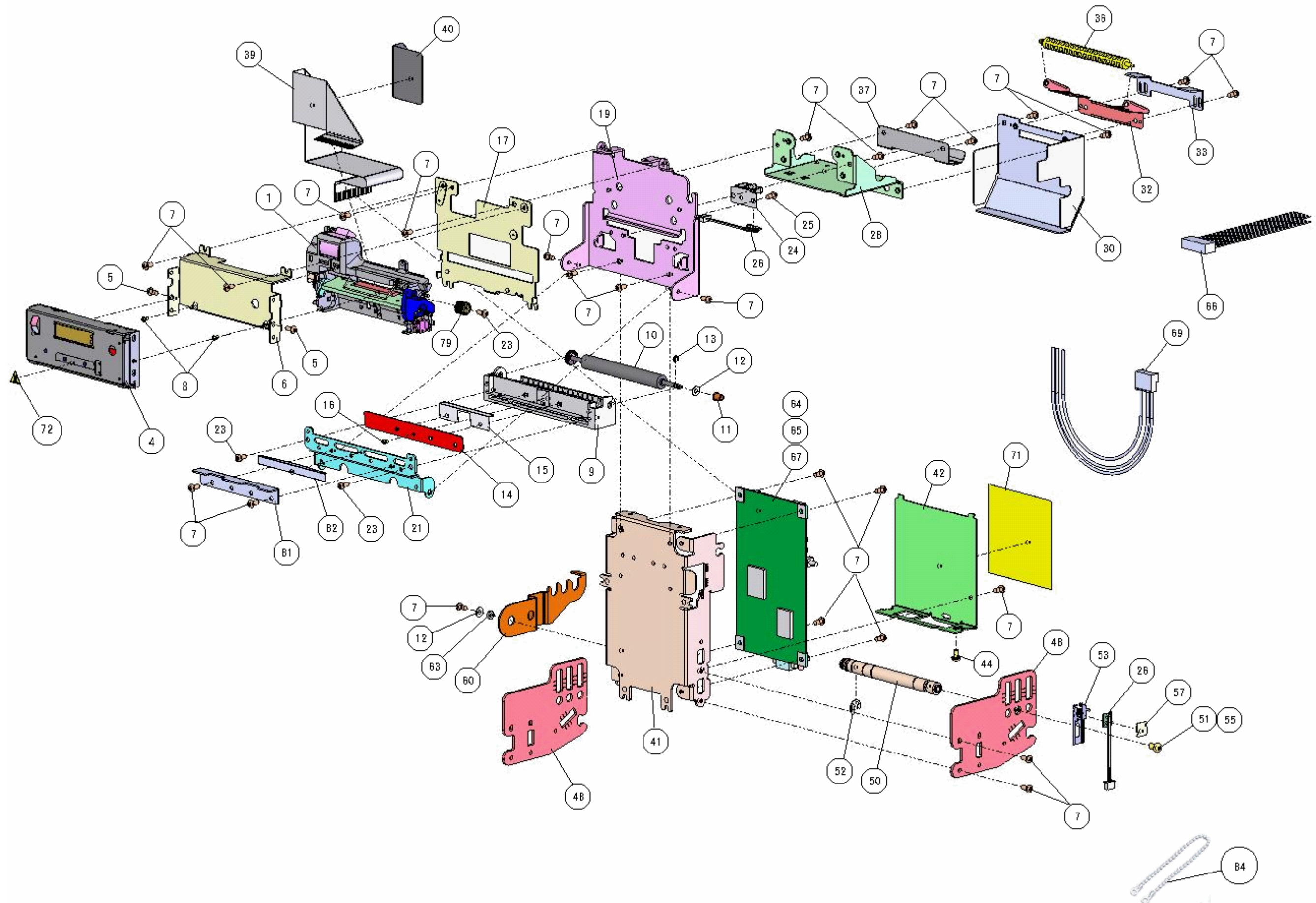
4.2.4 PMU2300 II / 2310 II 3-inch mode Base style:Horizontal



4.2.5 PMU2301 II 3-inch mode Base style: Vertical front-mount



4.2.6 PMU2302 II 3-inch mode Base style:Vertical back-mount

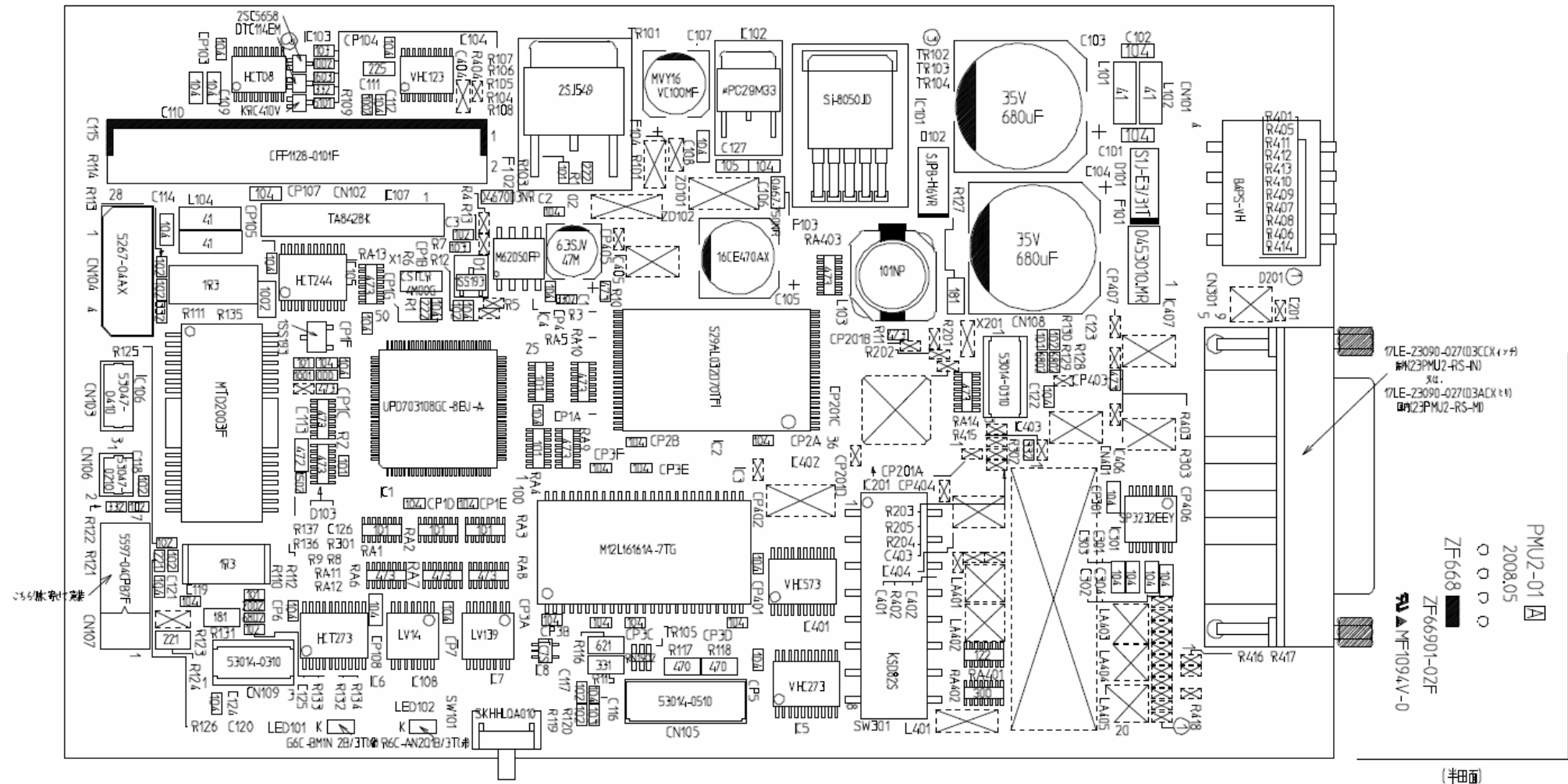


4.3 List of Electric Parts

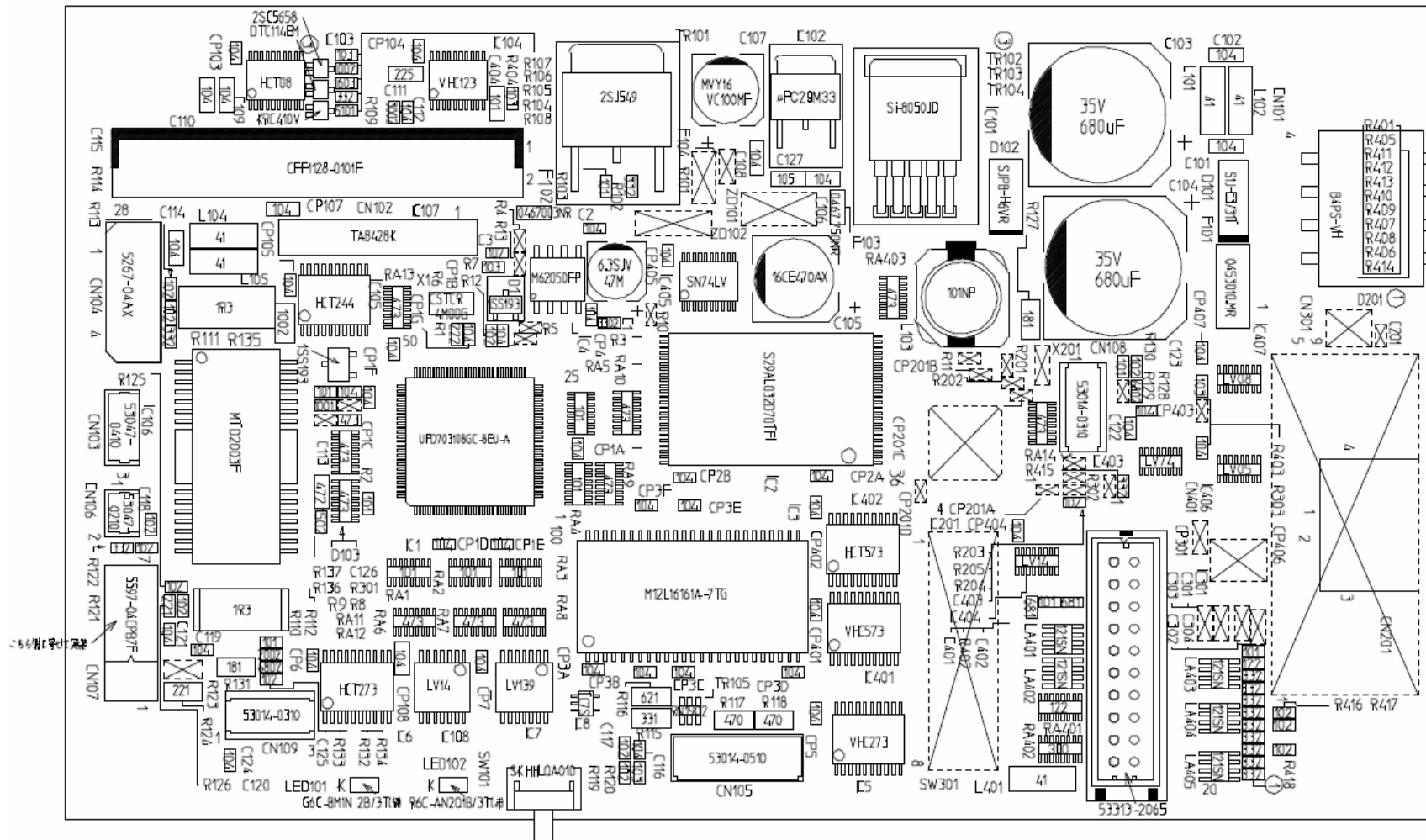
MARK	DESCRIPTION	PARTS NAME	QTY			OPTION
			RS	PA	UB	
IC1	UPD703108GC-8EU-A	CPU	1	1	1	
IC2	S29AL016D70TFI020	Flash Memory	1	1	1	
IC3	EM636165TS-7G	SDRAM	1	1	1	
IC4	M62050FP-DF0J	ResetIC	1	1	1	
IC5	SN74LV32APWR	CCMOS	1	1	1	
IC6	TC7WZ08FU(TE12LF)	CCMOS	1	1	1	
IC7	SN74HCT273PWR	HCMOS	1	1	1	
IC101	TC74LVX245FT(EL F)	HCMOS	1	0	0	
IC102	SP232EEN	I/F IC	1	0	0	
IC103	FT232RL	I/F IC	0	0	1	
IC201	SN74LVC4245APWR	CCMOS	0	1	0	
IC202	SN74LV00APWR	HCMOS	0	1	0	
IC203 204	SN74HCT573PWR	HCMOS	0	2	0	
IC205	SN74LV74APWR	CCMOS	0	1	0	
IC206 207	SN74LV05APWR	HCMOS	0	2	0	
IC301	SI-8401L	DC/DC Converter	1	1	1	
IC302	UPC29M33AT-AZ	Regulator	1	1	1	
IC303	SN74LVC3G07DCT3	CCMOS	1	1	1	
IC304	MTD2003F-3072	Transistor Array	1	1	1	
IC305	TA8428K(S)	Transistor Array	1	1	1	
TR101 102	RN1302(TE85L F)	Transistor	2	0	2	
TR301	2SJ549STL-E	Transistor	1	1	1	
TR302	RN1302(TE85L F)	Transistor	1	1	1	
TR303 304 305 306	2SK1133-T1B-A/JM	Transistor	4	4	4	
TR308	RN1902(TE85L F)	Transistor	1	1	1	
D2 301	1SS193(TE85L F)	Diode	2	2	2	
D302	S1J-E3/61T	Diode	1	1	1	
LED301	TLGV1020(T14 F)	LED	1	1	1	
LED302	TLRMV1020(T14 F)	LED	1	1	1	
X1	CSTCR4M00G55-R0	X'tal	1	1	1	
F301	0453010.MR	Fuse	1	1	1	
F302	C2Q3.0	Fuse	1	1	1	
F303 304	C2Q500	Fuse	2	2	2	
CN101	17LE-23090-027(D4CK)-FA	Connector	1	0	0	
CN102	DUSB-BRA42-T11-FA	Connector	0	0	1	
CN201	53313-2065	Connector	0	1	0	
CN301	B4PS-VH lssm	Connector	1	1	1	
CN302	CFF1128-0101F	Connector	1	1	1	
CN303	53047-0410	Connector	1	1	1	
CN304	5267-04A-X	Connector	1	1	1	
CN305 309	53047-0210	Connector	2	2	2	
CN306	5597-04CPB7F	Connector	1	1	1	
CN307 308	53014-0310	Connector	2	2	2	
CN310	53014-0510	Connector	1	1	1	
SW101	LSM708E	Dip Switch	1	1	1	
SW301	SKHHLQA010	Switch	1	1	1	

4.4 Parts Configuration

4.4.1 Main Control Board(Serial)



4.4.2 Main Control Board(Parallel)



PMU2-01 A
2008.05
ZF668
ZF66901-02F
MF1094V-0

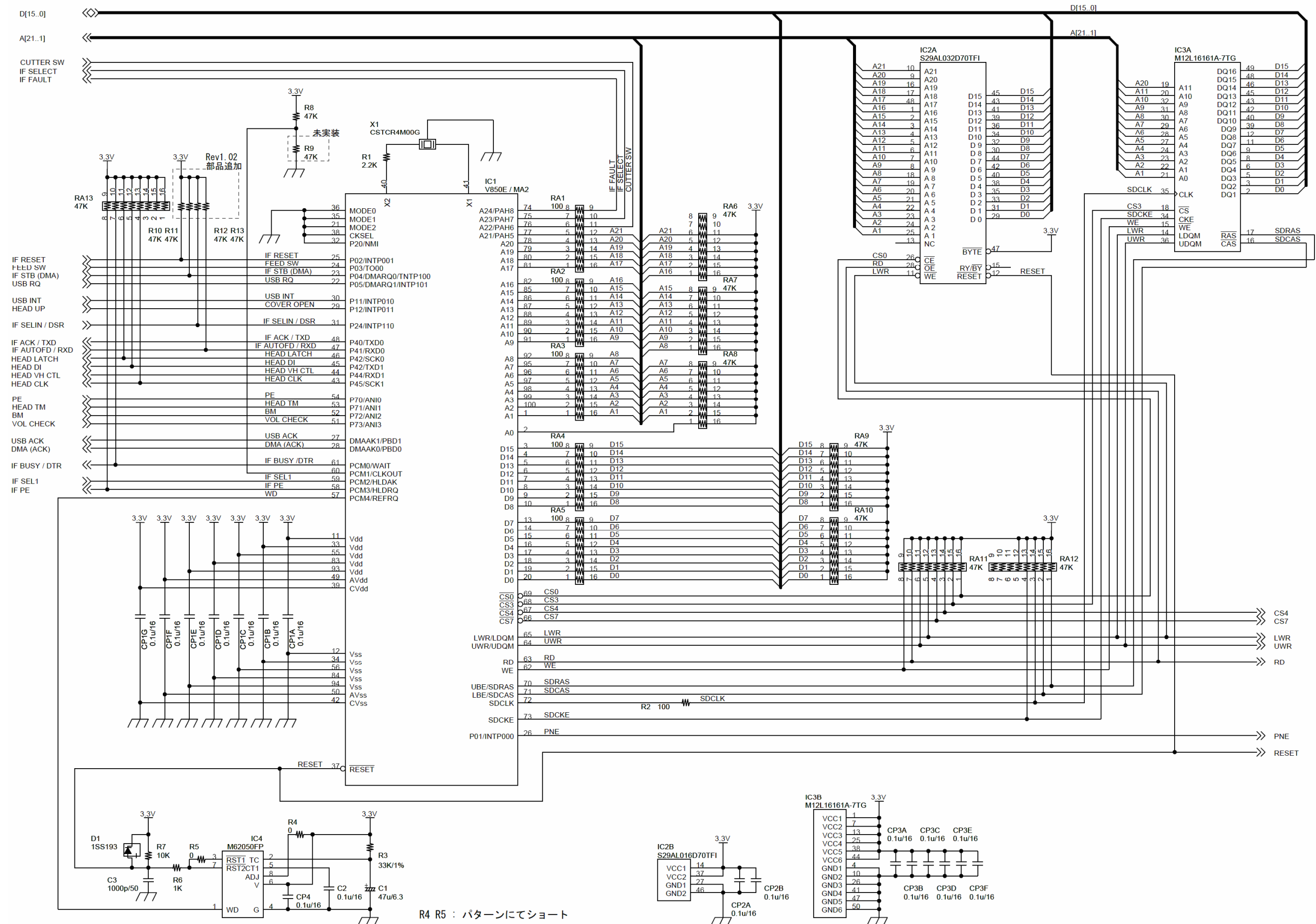
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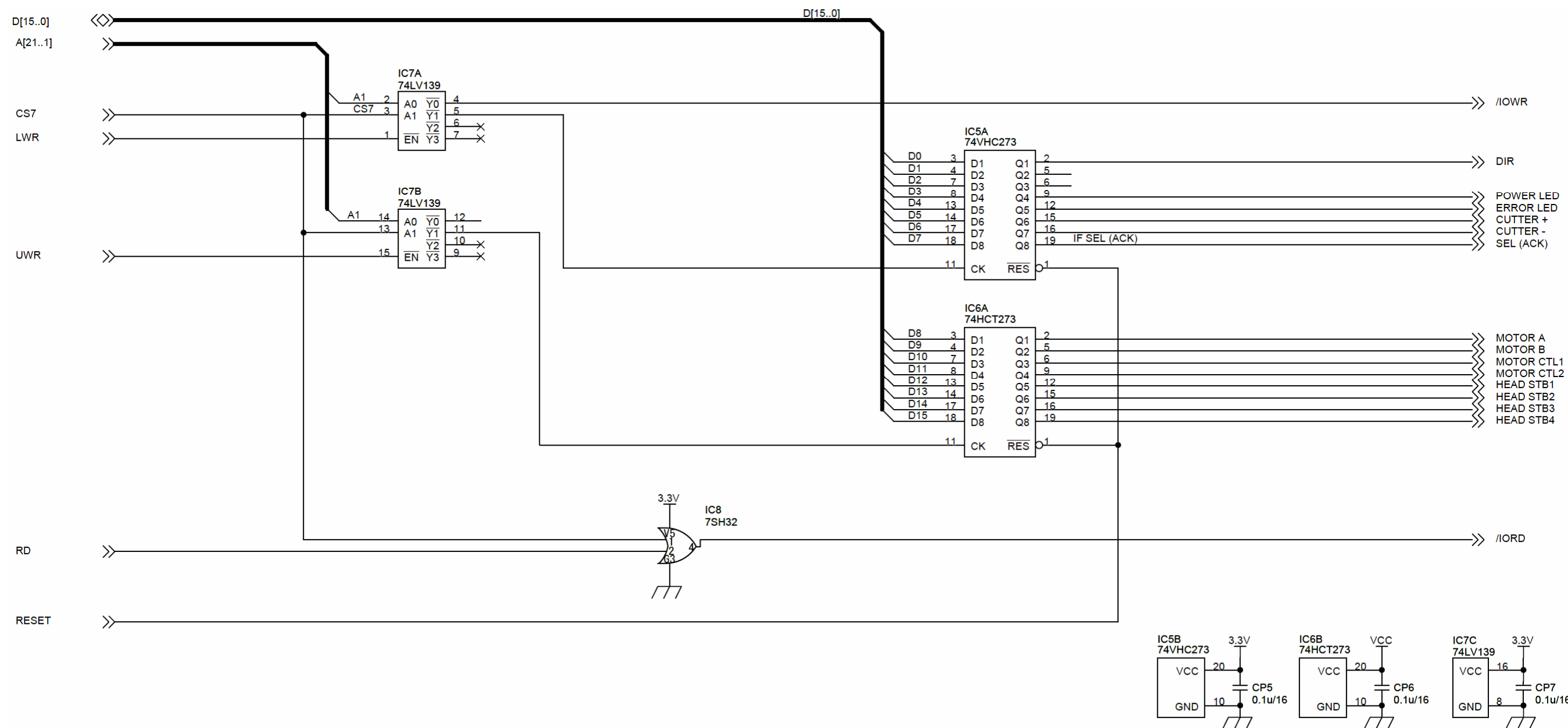
4.4.4 Main Control Board(USB)

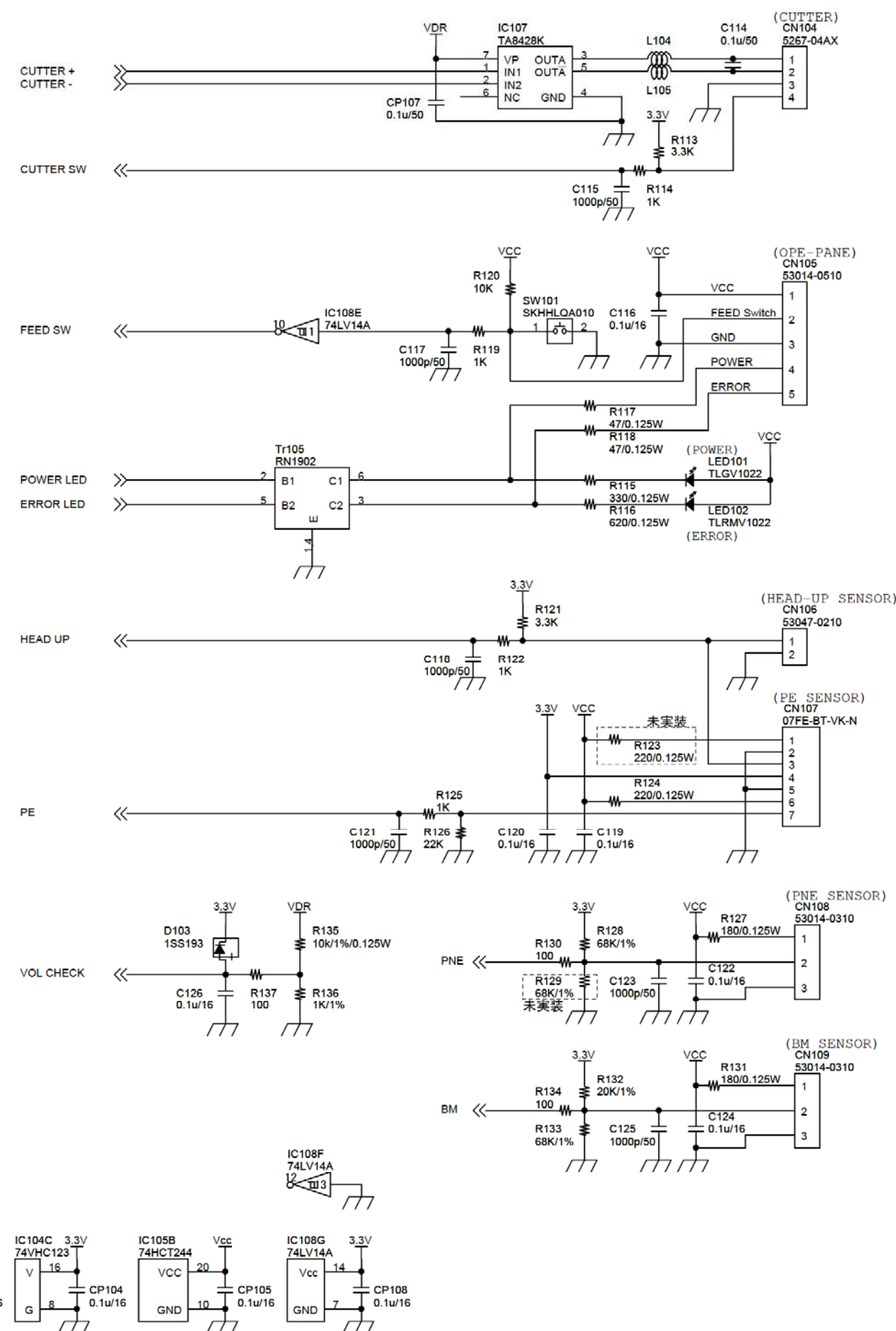
5. CIRCUIT DIAGRAM

5.1 Main Control Board (CPU Circuit)

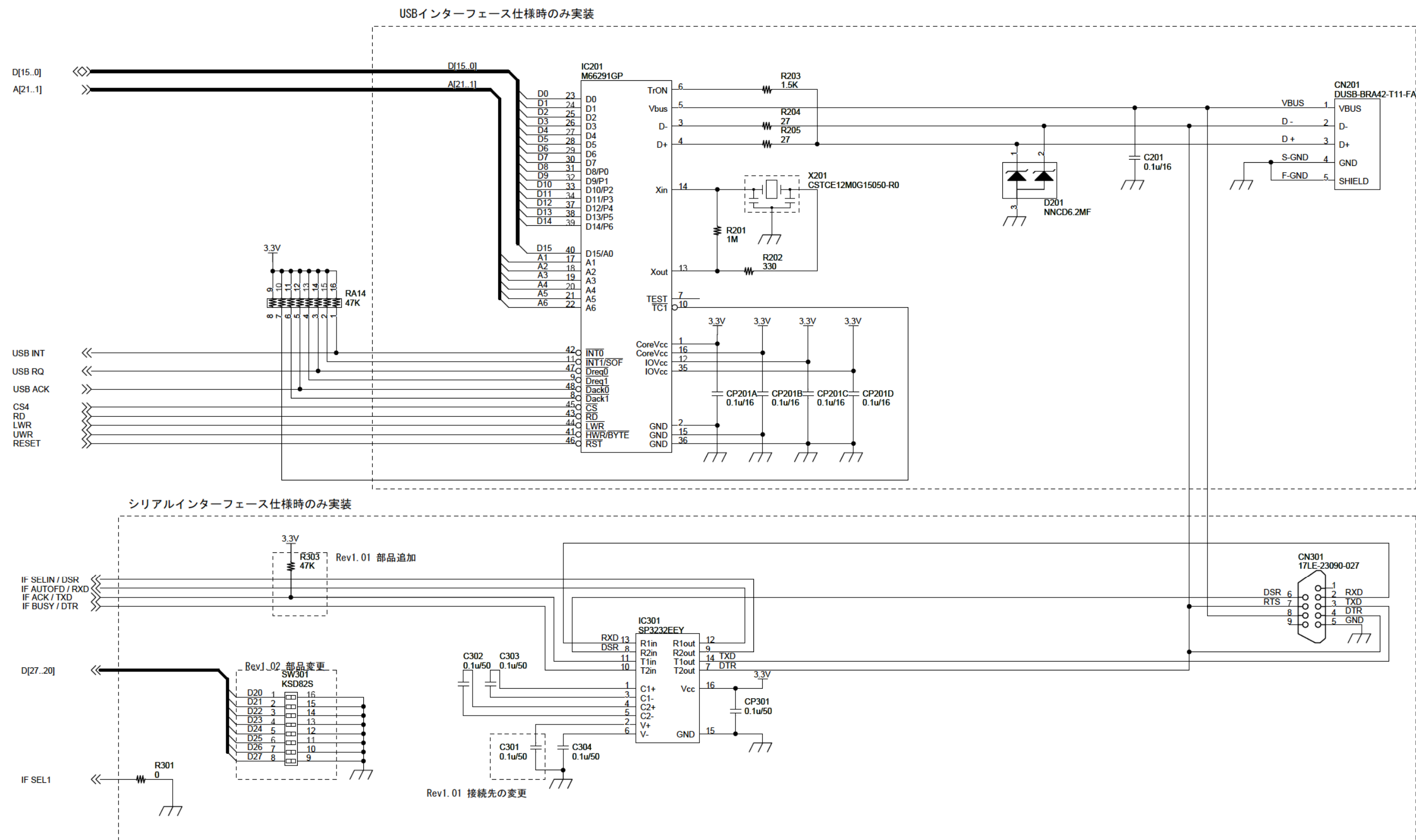


5.2 Main Control Board (port)





5.4 Main Control Board (Interface Circuit on Serial, USB)



IC401及びRA401, 402についてはシリアルインターフェース仕様でも実装
R302についてはシリアルインターフェース仕様のみ実装

